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ALBERTA OIL SANDS ENVIRONMENTAL RESEARCH PROGRAM

A Socioeconomic Evaluation of the Recreational use of Fish and Wildlife Resources in Alberta with Particular Reference to the AOSERP Study Area

Volume IV: Nonconsumptive Recreational use of Fish and Wildlife

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1. INTRODUCTION

This report is Volume IV of a four volume set entitled "Socioeconomic Evaluation of the Recreational Use of Fish and Wildlife Resources in Alberta with Particular Reference to the AOSERP Study Area." The four volumes carry the following subtitles: Volume I, Summary and Conclusions; Volume II, Recreational Fishing; Volume III, Recreational Hunting; and Volume IV, Nonconsumptive Recreational Use of Fish and Wildlife.

The project, which began in January, 1976, was financed by the Alberta Oil Sands Environmental Research Program (AOSERP) under the auspices of the former Aquatic and Terrestrial Fauna Technical Research Committees. Phase I of the project, the design phase, was carried out by the authors under a contract between AOSERP and (IMPACT) Environomics Ltd. Phase II of the project, the implementation and analysis phase, was carried out by the authors under a contract between AOSERP and the University of Alberta. The work in Phase II was undertaken at the Department of Rural Economy, University of Alberta.

2. BACKGROUND, SCOPE AND OBJECTIVES

A quantum jump in international oil prices as well as the deterioration of Canada's balance of trade in oil has generated a great deal of interest in the oil sands resources of Northeastern Alberta in the past few years. There have been a series of proposals to establish oil sands extraction operations. A new oil recovery plant is currently under construction. New programs to design and examine alternative methods for extracting oil from the oil sands are underway. However, along with this activity, there has also been substantial concern about the social and environmental side effects of oil sands development.

Utilizing current technology, oil sands recovery involves gigantic surface mining operations and hugh recovery plants. The inevitable results are significant land disturbances and substantial air and water pollution. These effects could alter current and potential resource uses of natural environmenta, such as outdoor recreation (including hunting, fishing, viewing, photographing and studying fish and wildlife) which are of value to all Canadians and particularly to Albertans. If proper decisions are to be made about the development of oil sands, it is necessary to ascertain the manner in which oil recovery activities will affect the use of other natural resources. Such information is essential input into public policy formulation and implementation if the best interests of Albertans and Canadians generally are to be served by the selection of resource use patterns in Northeastern Alberta.

This report presents a socioeconomic evaluation of non-consumptive recreational use of fish and wildlife in the AOSERP study area (Figure 1) and compares the results with those of a similarly oriented evaluation covering the province as a whole. It is one of three reports by the authors which focus on the recreational use of fish and wildlife in the study area and throughout the province.[1] This report is also one of many studies being

[1] The other two reports deal with recreational hunting and fishing (consumptive uses of fish and wildlife) in the AOSERP study area and throughout the province.

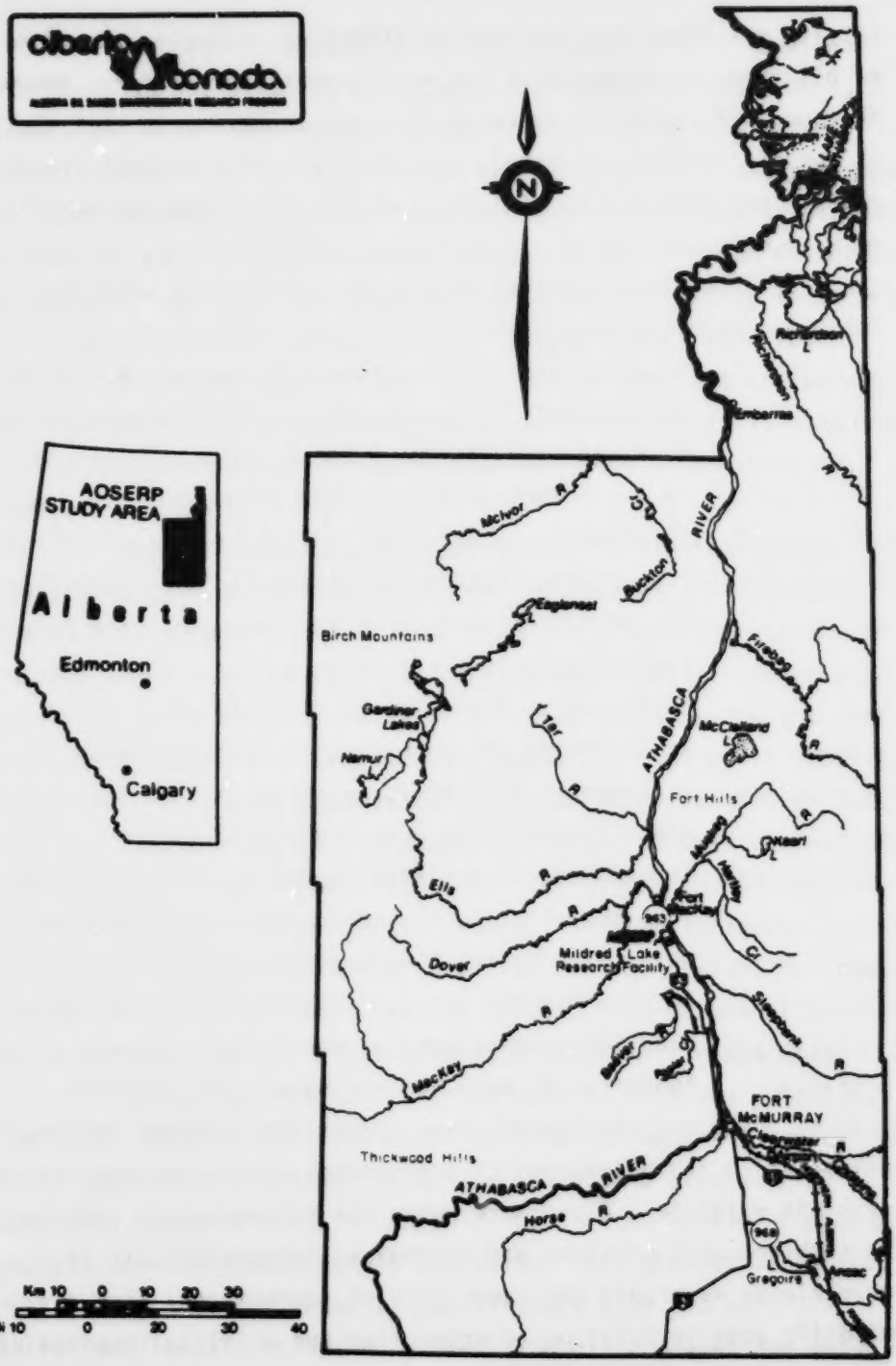

Figure 1. Map of the AOSERP study area.

carried out under the auspices of AOSERP to determine the effects of oil sands development on the environment. It differs, however, from most of the other research currently underway in that the focus is social (that is, on people and their use of a natural resource) rather than physical or biological (that is, on the characteristics of a resource per se).

The study reported herein was carried out with the following objectives in mind:

1. To ascertain the socioeconomic characteristics of participants in nonconsumptive recreational use of fish and wildlife (observation, photography and study) in the AOSERP study area and throughout the province;
2. To establish a detailed profile of nonconsumptive recreational activities related to fish and wildlife in the AOSERP study area and throughout the province, particularly with regard to activity locations, durations, and species of fish and wildlife;
3. To determine the number of recreational days expended in this activity in the AOSERP study area and throughout the province;
4. To examine the desirability of different species of fish and wildlife for nonconsumptive recreational activities in the AOSERP study area;
5. To estimate the value of fish and wildlife resources used for nonconsumptive recreational purposes in the AOSERP study area and throughout the province.

The realization of these objectives provides information essential to the assessment of nonconsumptive recreational use of fish and wildlife. Futhermore, when the socioeconomic information is combined with physical and biological information, it is possible to ascertain the importance of recreational fish and wildlife uses in relation to other fish and wildlife resource uses and in relation to other resource use patterns that may alter fish and wildlife habitat.

The results presented in this report provide important data for fish and wildlife management. Although photographers, viewers and other nonconsumptive users do not affect different species in the distinctively direct way that hunters and fishermen do, human presence at certain locations and during certain periods of time can be disruptive to species populations. These disturbances, for example, can occur during breeding times in breeding locations and cause abandonment of the young or disrupt other behavioural patterns of species populations. In order to regulate the amounts, locations and times of human presence and activity, it is essential to know where people go and what they do. This information is provided.

Beyond nonconsumptive recreational activities, this report also provides an indication of fish and wildlife values arising from such activities. The fish and wildlife resources of Alberta, including those of the AOSERP study area, are capable of satisfying human wants. The value of these wants are in the form of aesthetic, scientific, recreational, commercial and other benefits. Nonconsumptive recreational use of fish and wildlife through such activities as observation and study is typical of most recreation resource uses in the sense that associated values (benefits) are not readily known through market prices. In some instances, market value components in the form of user fees may be present but they only reflect a portion of total use values. The values or benefits are therefore largely, if not solely, extramarket in character.

Nonconsumptive recreational uses of fish and wildlife, like other resource uses for which extramarket benefits typically exist, tend to receive less attention and become displaced by commercial resource uses for which market prices provide comparatively complete and ready measures of use value. Oil production in the AOSERP study area for example, may displace fish and wildlife habitat and hence fish and wildlife. The oil produced has value reflected in the market place. The displaced fish and wildlife has value but that value, which is also displaced (lost), is not reflected in the market place. Public policy directed at resolving

resource use conflicts must reflect both market and extramarket values in determining those resource use patterns that best serve society. Commercial resource uses, such as oil extraction, which displace values (largely extramarket) from uses tied to natural environments, such as fish and wildlife observation and aesthetic enjoyment, incur social costs in the form of displaced or foregone natural environment benefits which should be charged against commercial uses. Historically this approach has been largely neglected resulting in resource use imbalances favouring commercial resource uses. This report, therefore, is not only important in providing fish and wildlife management input but also in presenting quantitative estimates of extramarket benefits associated with nonconsumptive recreational fish and wildlife use activities. These estimated benefits can be taken explicitly into account, along with other important information, in formulating public decisions regarding natural resource allocations among use alternatives.

3. RESEARCH DESIGN AND PROCEDURES

3.1 QUESTIONNAIRE DESIGN

The information required to meet the objectives of this study was obtained during 1976 using questionnaires. Two questionnaires were developed and utilized--one a small questionnaire designed to obtain information from a sample of provincial residents, and the other, a personal interview questionnaire designed to obtain information from a sample of residents of the AOSERP study area (Figure 1). Both questionnaires were designed drawing up earlier work undertaken in the province and elsewhere (Hanus 1974; Horvath unpubl.; Phillips unpubl.; Whiting 1972). The fact that very little previous research in nonconsumptive fish and wildlife use has been undertaken resulted in a great deal of design effort on the questionnaires used in this study. Initial drafts of the questionnaires were developed and modified in consultation with members of the former Aquatic and Terrestrial Fauna Technical Research Committees of AOSERP. Final drafts were then prepared and duplicated. A copy of each questionnaire is contained in Appendix 8.1.

Both questionnaires were designed to obtain biographic information about the respondents and their families. This information included residence, age, occupation, family size, family income and education level (Appendix 8.1). These variables may have significant bearing on the nonconsumptive use of fish and wildlife. For example, income may limit the amount of time taken from fish and wildlife observation and study and the type of equipment used in such activities. Residence will have a bearing on required travel distance which in turn influences the locations and durations of such activities. Similarly, the other variables may influence the behaviour and value of activities of the respondents.

The format of the balance of the questions in the two questionnaires are different due to the fact that the province-wide questionnaire is a self administered mail questionnaire and

the AOSERP study area questionnaire is a personal interview questionnaire used by the interviewer in obtaining information from the respondent interviewee. Nevertheless, similar information was sought in both cases. This information pertained to the amounts of time spent during 1975 by each family member enjoying birds, animals and aquatic life, the locations and proportions of times spent in these activities, the values associated with these activities, the types of other outdoor activities associated with fish and wildlife enjoyment and species preferences. The province-wide questionnaire also included the following: (1) an Alberta map showing five regions to aid in assessing the locations of different proportions of activity times; (2) a question of assess location preferences in terms of area type such as cultivated land, forest land and so on; and (3) questions dealing specifically with the AOSERP study area in terms of location, species preferences and comparisons with the province as a whole. The AOSERP study area questionnaire included questions which addressed the following: (1) accessibility and its influence on change in participation time; (2) seasonal preferences; (3) the importance of wildlife in outdoor activities; and (4) travel distances and travel modes. Both questionnaires made provision for any additional comments relating to respondents' fish and wildlife associated experiences.

The information received from questionnaire respondents provided the basis for the following: (1) an assessment of non-consumptive fish and wildlife use activities in the AOSERP study area and throughout the province; (2) a determination of the number of recreation days; (3) a profile of recreation activities relating to fish and wildlife resource uses; (4) an examination of the desirability of different species; and (5) a socioeconomic evaluation of fish and wildlife resources. Each of these items directly reflects the objectives outlined at the beginning of this report.

3.2 SAMPLING DESIGN

Inferences, drawn from the sample return results, can be made about the populations of Alberta and AOSERP study area residents. The reliability of such inferences depends in part upon the manner in which the respondent samples are drawn. All selections for each sample must be random; that is, each resident in the population must have the same probability of inclusion in the sample as every other resident in the population.

A sample of 4,000 names and addresses was sought initially for the province-wide mail survey. This sample size was considered sufficiently large to ensure high numbers of returns for analysis of the anticipated large diversity of activities associated with the nonconsumptive use of fish and wildlife. Severals lists of residents by household in the province were considered potential sources for sample selection. The most up-to-date and complete listing was the set of nine current provincial telephone directories. A set was purchased and utilized.

The average number of residents listed per white page in each directory was estimated by randomly selecting 10 pages, determining the number of residents listed for each page and calculating the average listings per page from the selection. The average for each directory was multiplied by the number of white pages contained in the respective directory to obtain an estimated total number of resident listings.[1] The estimated number of listings for all directories amounted to 580,756. In order to obtain approximately 4,000 sample selections, a randomly cited systematic sampling procedure was used by randomly ordering the nine directories, selecting one from the first 145 residential listings at random from the first directory chosen, and subsequently choosing every 145th listing thereafter. The selection process continued throughout the nine randomly ordered directories.

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[1] The total number of white pages calculated excluded those pages containing only nonresidential numbers such as block government and university listings. Adjustments also included partial page listings of this type.

Some areas in the province were listed in more than one directory. These duplications were eliminated to preserve randomness. This also resulted in a modest reduction in sample size which was considered acceptable. The total selections made resulted in a random sample size of 3,641.

The AOSERP study area survey required a much smaller sample size since it was being conducted by personal interview for which a 100 per cent response is virtually assured. Approximately 600 interviews were sought from area residents.[1] Since Indian and Metis households were largely excluded from the survey, all communities except Fort McMurray and Anzac were excluded from the survey. There were an estimated 4,710 eligible households[2] in Fort McMurray and 37 eligible households in Anzac during 1976. In addition to the households in Fort McMurray, there were 390 elibile residents at the Great Canadian Oil Sands camp and 5,650 eligible residents at the Syncrude camps.

Based on the breakdown of the 10,787 households and camp residnets the intended 600 interviews were to be distributed as follows: Fort McMurray households, 265; Anzac households, 2; Great Canadian Oil Sands (GCOS) camp, 20; and Syncrude camps, 313. Selections for each of the subsamples were to be made at random with a randomly selected alternate list of names to replace those in the initial sample who were unable to be contacted or who refused the interview. The telephone directory for the area and other similar listings for the purpose of subsample selections were not suitable due to unavailability or incomplete listings.[3]

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[1] The terms of reference for the project excluded Indian and Metis from both the province-wide and AOSERP study area surveys. The basis for exclusion is due to differences in life styles whereby fish and wildlife uses by Indian and Metis are largely consumptive and nonrecreational in character. There were a few exceptions.

[2] A total of 16,000 persons divided by 3.8 persons per household yielded 4,710 households.

[3] Fort McMurray is a rapidly growing and highly transient community with daily changes in population. Consequently, the telephone directory and voter lists become dated quickly. Camp listings are kept confidential.

Each of the four subsamples were chosen on different bases. Interviews were taken from six randomly selected households in Anzac. This number is larger than the sample of two originally called for, in order to allow for greater diversity of responses.

Household selections in Fort McMurray were made with the use of a current residential map of the town. The town was divided into 33 zones of varying size based upon existing municipal demarcations of development and population densities. The zones were randomly ordered and among the first 15 households in the first zone selected, a random selection was made (the starting point consisting of household 12 in Zone 7). Every fifteenth house was thereafter selected and the specific address recorded. In total, 340 selections were made from which 270 were randomly chosen as the sample. The remaining 70 selections served as an alternate list. It was found subsequently that the 70 alternate addresses were insufficient so an additional 1 in 40 random household selection was made resulting in an additional 125 alternate selections. The new alternate list of 195 selections was randomly ordered. Among the 195 alternates, a total of 135 were actually used primarily because first choice houses were either not built yet, were not complete, were complete but not yet occupied, or were vacant due to occupants being on vacation. A few residents were never at home or did not speak English. Only 21 of the original list declined the interview. A total of 301 interviews were completed.

The GCOS camp interviews could only be conducted during evening meal times. Given this situation, a table was randomly selected and a seat from that table randomly selected (1 to 15 tables and 1 to 18 seats). From this starting point every twentieth seat was systematically chosen. Since only 270 of the 390 residents were seated at any one time the procedure was repeated once more. Twenty interviews were conducted from the 27 randomly selected seats.[1]

[1] The situation for interviews was less than satisfactory in that interviews had to be rushed and occasional hostility was encountered by camp residents irritated at having their meal interrupted.

The Syncrude camp interviews could be conducted only in central locations at the camps where prospective respondents would voluntarily come forth for the interview. There was also a limited amount of time allocated for such a purpose. Prospective respondents were selected by trailer and room number. The starting point was randomly selected and every twentieth room thereafter selected. A drop letter was left at each selected room inviting the occupant to come for interviewing. Sixty-four interviews were completed in this manner. In addition, 19 volunteers not selected also came forth for interviewing. The volunteer nature of all 83 responses raised some concern about nonresponse bias in terms of interviewing primarily those considered fish and wildlife enthusiasts with nonrespondents largely representing nonenthusiasts. Considering, however, that remarkably few outdoor enthusiasts were encountered in the interviews, such bias appears not to exist. Indications are that the volunteers were largely motivated not by any strong views about fish and wildlife per se, but rather by the opportunity for a diversion or break in camp routine and, in some cases, general environmental concerns. Consequently, both the 64 selected volunteers and the 19 nonselected volunteers are most likely to be representative of the camp residents. The 83 interviews fall well short of the 313 interviews intended, due primarily to apathy. However, sufficient interviews were taken to draw inferences about the population.

In total 410 interviews were conducted in the AOSERP study area. These included 301 from the town of Fort McMurray, 6 from Anzac, 20 from the Great Canadian Oil Sands camp and 83 from the Syncrude camps.

3.3 MAIL-OUT AND INTERVIEW PROCEDURES AND RETURN RESULTS

The names and addresses from the province-wide survey were entered on a duplicate set of address labels. Each label was given an identification number matching an identical number on each questionnaire. The purpose of this procedure was to identify those who returned questionnaires, remove their duplicate address labels, and thereby exclude them from a second mailing intended

for those remaining who did not respond to the initial mailing. This procedure reduced printing, processing and postage costs by avoiding an across-the-board second mailing and precluded the propensity of second returns from first mailing respondents. The questionnaires were mailed during June 1976 along with covering letters (Appendix 8.1) and return envelopes.[1] The second mailing followed the first mailing by approximately four weeks. The returns from both mailings were collected by AOSERP and turned over to th authors for processing.

The mail survey involving 3,641 questionnaires in the first mailing resulted in a return of 587 questionnaires of which 184 were returned unopened (Table 1). The second mailing of 3.147 questionnaires resulted in additional returns of 554 of which 150 were returned unopened. In total, 334 questionnaires were returned unopened, thus reducing the effective sample size from 3,641 to 3,307. The total of 807 responses represents an effective sample response of 24.4 per cent (Table 1).[2]

The mail survey procedure used does not allow for an accurate check on nonresponse bias; that is, there is no precise way of determining whether or note respondents are as representative of the population as the nonrespondents. For example, it is not clear that respondents tended to have greater interests in fish and wildlife than nonrespondents. If this is indeed the case then any inference to the population would result in an upward bias in fish and wildlife interests. Ideally, a small

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[1] Ideally the questionnaires should have been sent earlier in the year. Because of delays beyond the authors' control, the questionnaires could not be sent out until June.

[2] The returns were in fact higher. However, approximately 275 returns were inadvertantly destroyed and consequently were never turned over to the authors for processing. Since these returns includes responses to this survey as well as two hunting and two fishing surveys (all being carried out in connection with the recreational use of fish and wildlife project), the extent of reduction in each survey could not be determined. Indications are that the majority of responses were for this survey. Nevertheless, the results presented here stand.

subsample taken from the mail sample for personal interview, from which a 100 per cent response would be forthcoming, could be used to test for nonresponse bias. This procedure is extremely time consuming and costly and for these reasons was not undertaken. Some indication, however, can be derived from a comparison of results between first and second mailings. Respondents to the second mailing represent a portion of nonrespondents to the first mailing. If a nonresponse bias exists, some indication of this should appear in the comparison of mailings. Although less than ideal, this procedure is feasible and provides some insights into the possible problem of non-response bias.

The interview procedures for the AOSERP study area survey are largely outlined above in the discussion of sample design. Three interviewers were employed during the summer of 1976. They worked closely together and attempted to use similar approaches in obtaining the information called for on the questionnaire (Appendix 8.1). By approaching in a non-threatening manner designed to establish rapport with prospective respondents, the information sought was generally given to the best of the respondents' abilities.

An initial attempt was made to obtain 600 interviews of which 313 were to come from the Syncrude camp. However, due to the apathy of residents at the camp and the voluntary nature of the only procedure feasible, only 83 interviews were completed. This reduced the effective sample size to 410 (Table 1).

3.4 THE PROCESSING OF RESPONSES

The returns from the two surveys were collected and sorted for coding. Codes were developed for all possible answers to each of the questions presented in the questionnaires. These codes were used to code the answers contained in each questionnaire. The coded responses were checked and submitted for key punching on data processing cards. The punched cards were verified and the coded data read into the University of Alberta's central computing system for analysis.

Table 1. Sample responses to nonconsumptive recreational fish and wildlife use surveys, 1976.

	Province-Wide Survey			AOSERP Study Area Survey
	First Mailing	Second Mailing	Cumulative Results	Interview Results
Household Population	580,756	580,756	580,756	10,787
Number Sampled	3,641	3,147	3,641	600
Per Cent Sampled	0.6%	0.5%	0.6%	5.6%
Questionnaires Returned Unopened	184	150	334	Not Applicable
Effective Sample Size	3,457	2,997	3,307	410[a]
Effective Per Cent Sampled	0.6%	0.5%	0.6%	3.7%
Questionnaires Returned	403	404	807	410
Per Cent of Effective Sample Responses	11.7%	13.5%	24.4%	100.0%

[a] The reduction of sample size from 600 to an effective sample size of 410 was due in part to the lack of interview time and procedural limitations imposed at the Syncrude Camps, but primarily to apathy on the part of camp residents. This resulted in realized interviews substantially smaller in number than the number originally intended.

4. PROVINCIAL SURVEY RESULTS

Among the 807 province-wide survey questionnaires returned (Table 1), 689 were usable. Detailed results of the survey returns are contained in Appendix 8.2 and summarized and discussed in this section of the report. A comparison between first and second mailings for selected variables was made to see if there was evidence of non-response bias. At the five per cent level of significance there was no significant difference between the results of the two mailings for nine of the eleven variables. Results for the remaining two variables indicated that there was a difference (Appendix 8.2, Table 29). Therefore, the results at this level of significance are indeterminate in supporting or negating the assumption that nonresponse bias does not exist. At the one per cent level of significance, however, there was no significant difference between the results of the two mailings, supporting the assumption that nonresponse bias does not exist. For lack of any strong evidence to the contrary, nonresponse bias is assumed not to exist. The results of both mailings are combined and inferences from the sample of 689 respondents (households) about the population of 580,756 provincial households during 1975 are made directly; that is, the 689 sample respondents (households) are taken as representative of the population without the use of any adjustments or weighting procedures.

4.1 SOCIOECONOMIC CHARACTERISTICS

Approximately 64 per cent of the respondents (households) reside in the eight most populated communities in the Province. Edmonton and Calgary account for 50 per cent and the communities of Grande Prairie, Lethbridge, Medicine Hat, Red Deer, St. Albert and Sherwood Park account for 14 per cent. The residences of the remaining respondents are dispersed throughout the Province (Appendix 8.2, Table 7).

Of the 689 respondents, 551 had spouses (80 per cent). The respondents were distributed among 17 occupation categories, of which professional and technical occupations accounted for

23.4 per cent, managerial occupations, 12.1 per cent and tradesmen, 12.1 per cent with the remaining categories accounting for less than 10 per cent each (Appendix 8.2, Table 8). The spouses of respondents were distributed among 16 of the 17 categories of which homemaker accounted for 53.8 per cent, professional and technical 12.1 per cent and clerical, 11.6 per cent with the remaining categories accounting for less than six per cent each (Appendix 8.2, Table 8).

Family size ranged from one to nine persons in a household, the average size being 3.2 persons. The mode was 2.0 persons, the median, 3.0 persons.and the sample standard deviation, 1.65 persons (Appendix 8.2, Table 9). Among the 689 respondents, 20.0 per cent had no spouse, 39.5 per cent had no children, 16.4 per cent had one child, 21.6 per cent had two children, 14.4 per cent had three children and 8.1 per cent had more than three children (Appendix 8.2, Table 11). The average number of children per respondent was 1.4 and the average number of children per respondent with children was 2.3. Of the total number of children, 76.6 per cent (or 741 children in the sample) were over five years of age. Among the 689 respondents, 46.2 per cent had children in this age category. The average number of such children per respondent was 1.08 and the average number of such children per respondent with such children was 2.33 (Appendix 8.2, Table 13). The reason for making a distinction between children five years or under and children over five years of age relates to the fact that the fish and wildlife enjoyment activity discussed below includes only respondents, spouses, and children over five years of age.

The age of respondents ranged from 15 to 91 years with an average age of 41.85 years. The median age was 39.31 years, the modal age, 31.00 years, and the sample standard deviation was 16.40 years. The age of spouses ranged from 13 to 89 years with an average age of 39.80 years. The median age was 36.86 years, the modal age, 30.00 years, and the sample standard deviation was 13.63 years. The average age of respondents and spouses combined was 40.92 years (Appendix 8.2, Table 10). Along with the 689 respondents and 551 spouses, there were 967 children represented in the sample.

The average age per child was 11.20 years with a median of 11.00 years, a mode of 14.00 years, and a sample standard deviation of 6.56 years (Appendix 8.2, Table 12).

The number of years of formal education of respondents ranged from 1 to 25 with an average of 12.27 years and a sample standard deviation of 3.39 years. The number of years of formal eduation of spouses ranged from 1 to 20 with an average of 11.64 years and a sample standard deviation of 2.51 years. The average number of years of formal education for respondents and spouses combined was 11.99 years with a sample standard deviation of 3.04 years. The mode and median were 12.00 years in all cases (Appendix 8.2, Table 14).

Nearly one half (47.5 per cent) of the provincial survey respondents had annual family incomes between $10,000 and $20,000. The average annual income per family was $17,677. Approximately 20 percent of the respondents had annual family incomes of $10,000 or less and slightly over 30 per cent had annual family incomes of more than $20,000 (Appendix 8.2, Table 15). With an average family size of 3.2 persons, the per capita income is an estimated $5,524.

In summary, a typical 1975 nonconsumptive fish and wildlife recreationist is 42 years of age, has a 40 year old spouse and one to two children averaging 11 years of age. Both recreationist and spouse have achieved 12 years of formal education, receive a family income of $17,677 per year, and tend to reside in an urban area.

4.2 RECREATION TIME SPENT ON FISH AND WILDLIFE ENJOYMENT ACTIVITIES

Fish and wildlife enjoyment in this report referes to nonconsumptive recreational use of birds, animals and aquatic life involving such activities as observation, study and photography. During 1975 heads of households spent an average of 94.03 hours per person in fish and wildlife enjoyment activities (Table 2 and Appendix 8.2, Table 16) of which bird life accounted for 30.11 hours per person, animal life, 37.96 hours per person, and aquatic

life, 25.96 hours per person. Spouses during 1975 spent an average of 71.18 hours per person in fish and wildlife enjoyment activities (Table 2 and Appendix 8.2, Table 17) of which bird life accounted for 32.19 hours per person, animal life, 24.87 hours per person, and aquatic life, 14.12 hours per person. Each child over the age of five years during 1975 spent an average of 82.61 hours per person in fish and wildlife enjoyment activities (Table 2 and Appendix 8.2, Table 18) of which bird life accounted for 27.11 hours per person, animal life, 32.55 hours per person, and aquatic life, 22.95 hours per person.

The combined amount of time of fish and wildlife enjoyment per family during 1975 was 229.75 hours per family of which bird life accounted for 78.64 hours, animal life, 90.99 hours, and aquatic life, 60.12 hours (Table 2 and Appendix 8.2, Table 19). Children five years of age or younger are excluded from the number of hours presented. As indicated above, the average family size was 3.2 persons which, with the exclusion of childred five years of age or younger, drops to 2.88 persons per family. On this basis the overall amount of time of fish and wildlife enjoyment per person (including all adults and children over five years of age) during 1975 was 79.77 hours of which life accounted for 27.31 hours, animal life, 31.59 hours, and aquatic life, 20.88 hours (Appendix 8.2, Table 19).

On the basis of an estimated 580,756 Alberta households during 1975, the inferred annual total amount of time of nonconsumptive fish and wildlife recreational employment activities amount to 133,428,700 hours or 16,678,600 recreation days.[1]

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[1] Assumes one recreation day is equal to eight hours. Among the estimated 580,756 households (families), 16.84 per cent or 97,776 did not engage in any nonconsumptive fish and wildlife recreational activities during 1975, thus leaving 482,980 active families or a total of 1,390,980 individuals over five years of age (482,980 families x 2.88 persons per family).

Table 2. Average annual number of hours of nonconsumptive recreational fish and wildlife enjoyment by Alberta residents during 1975.

Item		Annual Number of Hours[a]				
		Mean	Mode	Median	Standard Deviation	Range
Head of Household	- Birds	30.11	0.00	5.00	78.30	0.00 - 750.00
	- Animals	37.96	0.00	8.50	53.81	0.00 - 850.00
	- Aquatic Life	25.96	0.00	2.00	61.14	0.00 - 700.00
	- All Species	94.03	0.00	25.00	172.00	0.00 - 1,500.00
Spouse	- Birds	32.19	0.00	4.00	92.89	0.00 - 998.00
	- Animals	24.87	0.00	5.00	63.23	0.00 - 600.00
	- Aquatic Life	14.12	0.00	0.00	44.86	0.00 - 577.00
	- All Species	71.18	0.00	18.00	162.10	0.00 - 1,500.00
Child[b]	- Birds	27.11	0.00	2.15	95.08	0.00 - 900.00
	- Animals	32.55	0.00	4.30	114.98	0.00 - 1,300.00
	- Aquatic Life	22.95	0.00	1.30	83.82	0.00 - 1,050.00
	- All Species	82.61	0.00	14.16	247.80	0.00 - 1,500.00
Family[b]	- Birds	78.64	0.00	10.00	248.57	0.00 - 3,000.00
	- Animals	90.99	0.00	9.00	275.47	0.00 - 3,350.00
	- Aquatic Life	60.12	0.00	5.00	197.21	0.00 - 3,000.00
	- All Species	229.75	0.00	60.00	621.82	0.00 - 9,000.00

[a] Source: Appendix 8.2, Tables 16, 17, 18, and 19.

[b] Excludes children five years of age or younger.

Of this total, bird life enjoyment accounted for 45,670,650 hours (5,708,850 days or 34.2 per cent); animal life accounted for 52,843,000 hours (6,605,370 days or 39.6 per cent); and aquatic life accounted for 34,915,050 hours (4,364,380 days or 26.2 per cent).

4.3 LOCATIONS OF FISH AND WILDLIFE ENJOYMENT ACTIVITIES

Fish and wildlife enjoyment activities are widely dispersed throughout the Province and, for many individuals, in numerous locations. Such activities are sometimes planned and sometimes engaged in unexpectedly. The diversity of locations of fish and wildlife encounters are such that it is often very difficult, if not impossible, for individuals to recall accurate and complete detailed information about specific locations and durations of fish and wildlife enjoyment activites. However, less detailed information on activity times and locations is much more readily available. In recognition of this phenomenon, the Province was divided into five areas (Figure 2) and respondents were asked to provide an allocation of their families' (households) annual total fish and wildlife enjoyment hours among these five area locations (Appendix 8.1, Provincial Survey Questionnaire, Item 7).

Area 1 is the AOSERP study area (Figures 1 and 2) within which 17,420 Alberta families (3.6 per cent of the provincial total) spent at least part of their total time in nonconsumptive fish and wildlife enjoyment activities (Table 3). Each family spent an average of 38.3 hours during 1975 in fish and wildlife enjoyment activities in the area bringing the total activity time in the area to 667.145 hours (83,393 days or 0.5 per cent of the provincial total).

Area 2 is northern Alberta exclusive in Area 1 (Figure 2) within which 236,370 Alberta families (48.9 per cent of the provincial total) spent at least part of their total time in nonconsumptive fish and wildlife enjoyment activities (Table 3). Each family spent an average of 147.9 hours during 1975 in fish and wildlife enjoyment activities in Area 2 bringing the total activity time in

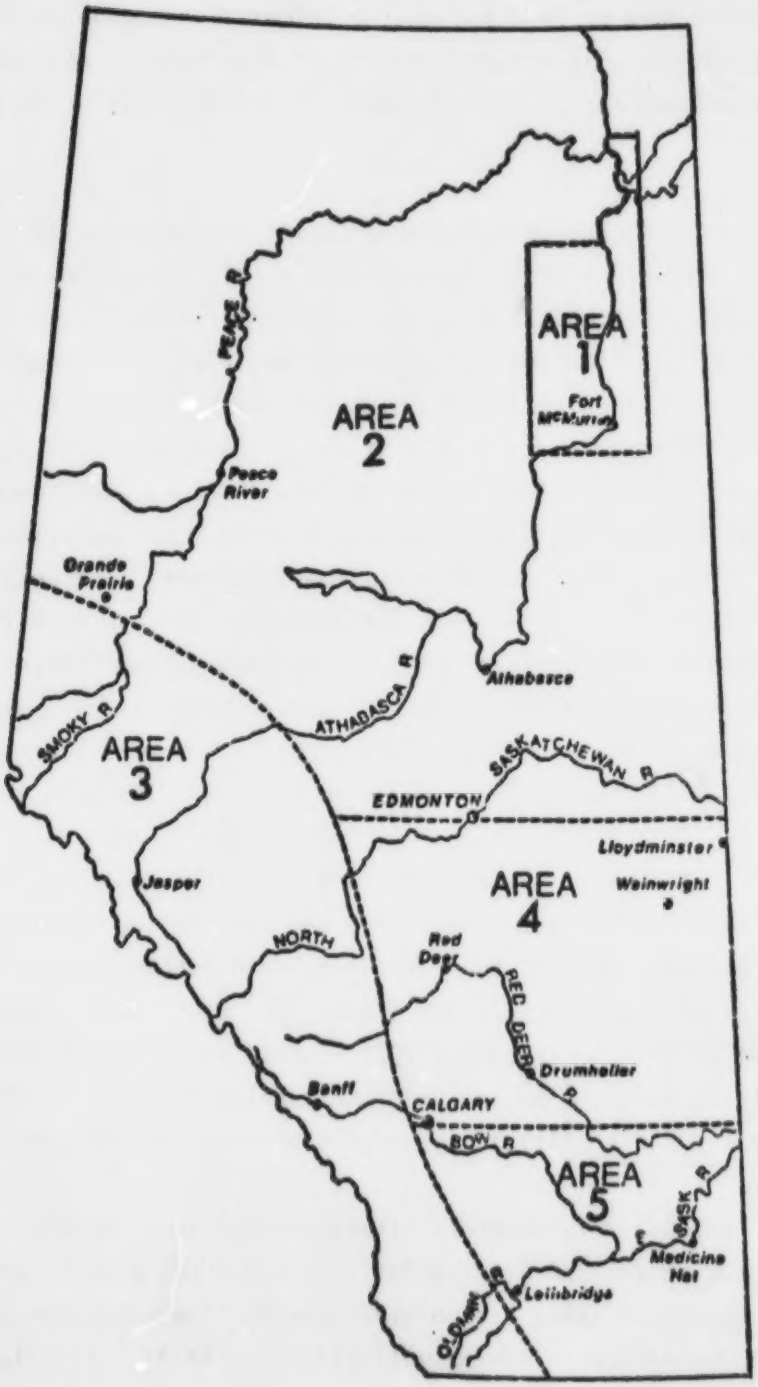

Figure 2. Fish and wildlife enjoyment areas in Alberta.

the area to 34,958,320 hours (4,369,790 days or 26.2 per cent of the provincial total).

Area 3 includes the eastern slopes of Alberta (Figure 2) within which 335,095 Alberta families (69.4 per cent of the provincial total) spent at least part of their total time in nonconsumptive fish and wildlife enjoyment activities (Table 3). Each family spent an average of 122.6 hours during 1975 in fish and wildlife enjoyment activities in the eastern slopes bringing the total activity in the area to 41,096,040 hours (5,137,005 days or 30.8 per cent of the provincial total).

Area 4 is the east central part of the Province between Calgary and Edmonton (Figure 2). An estimated total of 286,890 Alberta families (59.4 per cent of the provincial total) spent at least part of their nonconsumptive fish and wildlife enjoyment activity time in this area. The amount of time in such activities in the area amounted to 123.3 hours per family for a total time of 35,358.605 hours (4,419.825 days or 26.5 per cent of the provincial total).

Area 5 is south eastern Alberta (Figure 2) within which 144,608 Alberta families (29.9 per cent of the provincial total) spent at least part of their total non-consumptive fish and wildlife enjoyment activity time (Table 3). Each family spent an average of 147.6 hours in such activities in the area bringing the total time to 21,348,590 hours (2,668,574 days or 16.0 per cent of the provincial total).

Location preferences by type of area for fish and wildlife enjoyment activities are strongest for mountain areas (18.0 per cent), followed by forested areas (16.0 per cent), national parks (14.5 per cent), provincial parks (13.5 per cent), and wilderness areas (13.2 per cent) (Appendix 8.2, Table 27). These features typify the eastern slopes (Area 3) and, with the exception of mountain areas, typify Northern Alberta (Areas 1 and 2) where (combined) nearly 60 per cent of the total time spent in fish and wildlife nonconsumptive activities was spent by Albertans (Table 3). Remaining types of areas in order of preference were

Table 3. Location and hours of fish and wildlife enjoyment by families in Alberta during 1975[a].

Location[b]	No. of Families Active in Area	Per Cent of Total Families	Ave. No. of Hours per Family	Total Hours	Per Cent of Total Hours
Area 1	17,420	3.6	38.3	667.145	0.5
Area 2	236,370	48.9	147.9	34,958,320	26.2
Area 3	335,095	69.4	122.6	41,096,040	30.8
Area 4	286,890	59.4	123.3	35,358,605	26.5
Area 5	144,608	29.9	147.6	21,348,590	16.0
PROVINCIAL TOTAL	482,980[c]			133,428,700	100.0
PROVINCIAL AVERAGE			229.8		

[a] Source: Appendix 8.2, Tables 20 and 21.

[b] Area locations are given in Figure 2.

[c] This total represents the number of families active in nonconsumptive recreational fish and wildlife use in 1975 and is 83.16 per cent of the estimated 580,756 total number of families in the Province. This total is also less than the column total since each active family, on average, was active in 2.11 area locations.

roadside areas (7.9 per cent), range lands (7.9 per cent), cultivated lands (5.3 per cent) and urban areas (3.7 per cent) which tend to typify more the southeastern region of the Province (Areas 4 and 5) where most Albertans live but only spend approximately 42 per cent of the total provincial time spent in fish and wildlife nonconsumptive activities.

4.4 SPECIES PREFERENCES

Among the three broad categories (birds, animals and aquatic life) recreationists most strongly preferred animals as a group (59.72 per cent), including deer (14.30 per cent), moose (11.25 per cent), elk (7.30 per cent), bear (5.87 per cent), bighorn sheep (3.60 per cent), mountain goat (2.09 per cent), pronghorn antelope (2.06 per cent), squirrel (1.52 per cent), beaver (1.46 per cent), coyote (1.39 per cent), bison (1.28 per cent), fox (1.00 per cent), and other animal species (6.60 per cent) (Appendix 8.2, Table 25). Recreationists' second strongest preference was bird life as a group (24.32 per cent) including goose (3.11 per cent), owl (2.87 per cent), duck (2.81 per cent), pheasant (2.26 per cent), hawk (2.02 per cent), eagle (1.41 per cent), grouse (1.29 per cent), robin (1.07 per cent), and other bird species (6.48 per cent). Recreationists preferences for aquatic life as a group (15.47 per cent) included trout (8.77 per cent), yellow walleye (2.03 per cent), yellow perch (1.25 per cent), great norther pike (1.14 per cent), and other aquatic life (2.28 per cent). Although aquatic life as a group ranked third in recreationists' preferences trout did rank third after deer and moose among all species combined (Appendix 8.2, Table 25). Non-Alberta species accounted for 0.49 per cent, bringing the proportion of preference scores to 100 per cent.

The results presented here regarding preferences for the three categories of birds, animals and aquatic life are consistent with the amount of time spent enjoying each group. As indicated earlier, the greatest amount of time an individual, on average, spends enjoying fish and wildlife is for animal life (31.59 hours)

for which the greatest preference is shown (59.72 per cent). Bird life is second (27.31 hours per person per year and 24.32 per cent preference) followed by aquatic life (20.88 hours per person per year and 15.47 per cent preference).

In addition to providing preferences for species which they like to see, provincial survey respondents also indicated their preferences of species for which they would like to see increased populations (Appendix 8.1, Provincial Survey questionnaire, items 11 and 12). Recreationists preferences for different fish and wildlife species are in part dependent upon species availability. However, there are preferred species for which populations are such that nonconsumptive enjoyment opportunities are substantially restricted and increased populations are desired. The fact that the results presented below are at variance with the preference results presented above substantiates this premise.

Of the three broad categories of birds, animals and aquatic life, recreationists expressed their strongest preference for increased animal life populations (45.34 per cent) but the species rankings differ from the rankings presented above. Increased animal life population preferences indicate deer (8.41 per cent), pronghorn antelope (7.50 per cent). moose (5.91 per cent), elk (5.48 per cent), bear (2.80 per cent), bison (1.88 per cent), beaver (1.52 per cent), mountain goat (1.38 per cent), timber wolf (1.35 per cent), fox (1.12 per cent), and other species (7.99 per cent). Deer did rank first in both preference scales (like-to-see and increase-population) although the preference for increased populations was substantially lower (14.30 per cent vs 8.41 per cent). Moose, elk, bear and mountain goat were similar to deer in that they ranked higher on the like-to-see preference scale than on the increase-population scale). Pronghorn antelope, however, rated much higher on the increase-population preference scale than on the like-to-see preference scale (2.06 per cent vs 7.50 per cent). A similar but less pronounced result prevailed for bison (1.28 per cent vs 1.88 per cent). Beaver and fox ranked about the same on both scales. The timber wolf, which scored 0.81

per cent on the like-to-see scale increased in rank to 1.35 percent on the increase-population scale. Similar comparisons on less preferred animal life species can be made by examining the results contained in Appendix 8.2, Tables 25 and 26.

Recreationists show their second strongest preference for increased populations (30.69 per cent) in bird life which is stronger than the like-to-see preference ranking (24.32 per cent) presented above. Increased population preferences for bird life include owl (2.02 per cent), white pelican (1.80 per cent), duck (1.58 per cent), hawk (1.48 per cent), partridge (1.30 per cent), crane (1.18 per cent), swan (1.04 per cent), and other bird life species (6.60 per cent). Owl, duck and hawk each showed lower scores on the increase-population preference scale than on the like-to-see preference scale although they contained to rank high among all bird life species. White pelican, partridge, crane, and swan however showed substantial increases in increase-population preference scores and overall rankings over their scores and rankings for the like-to-see preference scale. Similar comparisons for other species can be made by examining Appendix 8.2, Table 25 and 26.

Recreationists have the third strongest preference for increased populations (20.82 per cent) for aquatic life, which is stronger than the like-to-see preference ranking (15.47 per cent) presented above. Increased population preferences for aquatic life include trout (10.70 per cent), arctic grayling (3.24 per cent), yellow walleye (2.60 per cent), yellow perch (1.39 per cent) and other aquatic life species (2.89 per cent). Arctic grayling showed a substantial increase in increase-population preference over like-to-see preference. Trout, yellow walleye and yellow perch showed similar but moderate increases. Similar comparisons on less preferred aquatic life species can be made by examining the results contained in Appendix 8.2, Tables 25 and 26.

Fish and wildlife unspecified accounted for 1.20 per cent of the proportion of increase-population preference scores. Non-Alberta species accounted for an additional 1.95 per cent bringing

the proportion of preference scores to 100 per cent (Appendix 8.2, Table 26).

In summary, recreationists involved in nonconsumptive fish and wildlife enjoyment like to see, in order of preference, the following species: deer, moose, trout, elk, bear, bighorn sheep, goose, owl, duck, pheasant, mountain goat, pronghorn antelope, yellow walleye, hawk, squirrel, beaver, eagle, coyote, grouse, bison, yellow perch, great northern pike, robin, and fox Other species are given in Appendix 8.2 Table 25. Recreationists would like to see, in order of preference, increased populations of the following species: trout, deer, pronghorn antelope, moose, elk, arctic grayling, bear, yellow walleye, owl, bison, white pelican, duck, beaver, hawk, yellow perch, mountain goat, timber wolf, partridge, crane, fox and swan. Other species are given in Appendix 8.2, Table 26.

4.5 OTHER ACTIVITIES ASSOCIATED WITH FISH AND WILDLIFE ENJOYMENT

Nonconsumptive recreational use of fish and wildlife through observation and study by recreationists generally takes place in association with other outdoor recreation activities. Provincial survey respondents were asked to indicate such activities undertaken by themselves and their families (Appendix 8.1, Provincial Survey Questionnaire, item 9). A total of 49 activities were given involving 2,885 listings (Appendix 8.2, Table 22).

The rank of activities by per cent of total listings is as follows: driving for pleasure (15.91 per cent), picnicing (15.70 per cent), camping (15.08 per cent), fishing (12.86 per cent), hiking (10.29 per cent), boating (9.12 per cent), hunting (6.72 per cent), skiing (5.93 per cent), snowmobiling (3.92 per cent) and other activities (4.47 per cent). Families typically engage in more than one associated activity during any given outing, e.g. driving for pleasure, picnicing, camping, fishing, and hiking may all be part of a single family outing involving nonconsumptive fish and wildlife enjoyment. Provincial survey respondents listed,

on average, 4.2 activites which they and their families engage in along with nonconsumptive recreational fish and wildlife enjoyment. Over one half of the families engaged in driving for pleasure, picnicing, camping and fishing in conjunction with nonconsumptive recreational fish and wildlife enjoyment. At least one member of between 25 and 50 per cent of all families engaged in hiking, boating, and hunting and at least one member of betwen 15 and 25 per cent of all families engaged in skiing and snowmobiling in conjunction with nonconsumptive recreational fish and wildlife enjoyment (Appendix 8.2, Table 22).

Two of the associated activities involved consumptive use of fish and wildlife, namely hunting and fishing activities.[1] Provincial survey respondents were asked to indicate whether or not at least one member of their family engaged in hunting during the 1975 season to which 23 per cent answered in the affirmative (Appendix 8.2, Table 23). Provincial survey respondents were asked to indicate whether or not at least one member of their family engaged in fishing during the 1975 season to which 54 per cent answered in the affirmative (Appendix 8.2, Table 24).

Of the estimated 580,756 families in Alberta during 1975, 482,980 were active in nonconsumptive recreational use of fish and wildlife. Based on an average of 2.88 persons per family (excluding children five years of age or younger), the number of resident Albertans involved in nonconsumptive recreational fish and wildlife activities was 1,390,980. Of this total, 7.4 per cent or 102,600 also engaged in hunting activity (Volume 3) and an estimated 22.2 per cent or 308,500 also engaged in fishing activity, of which 164,100 were licensed anglers (Volume 2).[2]

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[1] These two activities by license holders are discussed in detail in Volumes 2 and 3 of this series.

[2] The statement implies that virtually all hunters and anglers are part of the total number of active nonconsumptive recreational fish and wildlife resource users as well. Children and senior citizens are not required to hold an angling license to engage in fishing activity.

4.6 BENEFITS

In an attempt to arrive at annual benefits received by recreationists engaged in nonconsumptive recreational fish and wildlife activities, provincial survey questionnaire recipients were asked how much enjoyment value, above recreation expenses, they placed on such activities (Appendix 8.2, Provincial Survey Questionnaire, item 8). This form of willingness to pay questioning generally works well in providing benefit information for consumptive uses such as hunting and fishing, and for general outdoor recreation activities taken together (camping, hiking,etc.) (W.E. Phillips, 1973 and 1976). However, it did not provide suitable unambiguous benefit information from the provincial survey and the results were discarded. The proportion of respondents who answered the question was low (37 per cent) and the figures provided, when taken literally, represented unreasonably high proportions of respondent's incomes (13.4 per cent of family incomes) and were not in line with comparable figures for high quality forms of outdoor recreation (based on willingness to pay, i.e., demand) such as hunting and fishing. As a result, an alternative procedure was used to arrive at an estimate of annual nonconsumptive recreational fish and wildlife benefits.

As indicated above, nonconsumptive recreational fish and wildlife activity is generally engaged in along with other associated outdoor recreation activities such as driving for pleasure, picnicing, camping, fishing, hiking etc. (Appendix 8.2, Table 22). Outdoor recreation studies in North America, which usually include nonconsumptive fish and wildlife enjoyment activities, generally come up with benefit estimates of between $0.50 and $3.50 per person per day. These benefits include entrance fees and extra-market benefits which combined are over and above other recreation expenses. Studies in Alberta during 1970 (Phillips unpubl.; Moncrieff unpubl.; Whiting unpubl.) showed that benefits from outdoor recreation were $0.67 per person per day for provincial parks in southern Alberta and $1.68 per person per day for Alberta Forest Recreation Areas. During 1975, benefits for outdoor

recreation are no doubt higher due to increased recreation demand, incomes and inflationary pressures. These benefits are probably in the order of $3.00 per person per day for outdoor recreation activity including nonconsumptive fish and wildlife enjoyment activities. Since most of the nonconsumptive fish and wildlife enjoyment activities are associated wity outdoor recreation activities such as camping, hiking etc. (Appendix 8.2, Table 22), it is reasonable to assume that benefits from nonconsumptive recreational fish and wildlife activities during 1975 averaged $3.00 per person per day.[1]

Utilization of this average benefit estimate to derive estimates of benefits received by the population as a whole is done in the spirit of considerable caution. Any error in the average figure becomes compounded as a result of inferences to the population. Nevertheless, the inference made here does provide an indication of the order of magnitude of annual benefits and fish and wildlife values arising from nonconsumptive recreational fish and wildlife activities.

During 1975, there were an estimated 482,980 Alberta families or 1,390.980 individuals over 5 years of age who engaged in nonconsumptive recreational fish and wildlife activity. The total amount of time involved, as indicated above was 16,678,600 days.[2] On the basis of $3.00 per person per day in benefits, the annual total benefits received by Albertans from nonconsumptive recreational fish and wildlife activities in Alberta during 1975 amounts to an estimated $50,035,800. Since this figure is assumed

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[1] This figure is low in comparison to the higher quality recreation activities of fishing ($13.99 per licensed angler per day) and hunting $31.58 per hunter per day) Refer to Volume 2 and Volume 3.

[2] Each active individual spent an average of 12 days per year in such activities of which bird life accounted for 34.2 per cent, animal life, 39.6 per cent, and aquatic life, 26.2 per cent. The average for active and inactive individuals combined was 10 days per person per year.

to inclue both market (e.g., park entrance fees) and extramarket benefits, the value of fish and wildlife resources used for these activities is also $50,035,800. This annual value does not include the recreational or option values of fish and wildlife resources to those residents who do not engage in nonconsumptive recreational fish and wildlife activities nor the recreational or option values to other Canadians or non-Canadians. Furthermore, it does not include the values of the fish and wildlife resources from recreational consumptive uses (fishing and hunting), commercial uses and other nonrecreational uses.

4.7 COMMENTS

Each questionnaire recipient was given an opportunity to make comments which would help in an evaluation of the importance of fish and wildlife resources in Alberta. Among the 689 respondents, 420 gave no comment, 144 provided one comment and 123 provided two comments. There was a total of 390 comments (Appendix 8.2, Table 28). Of this total number of comments, 37 related to stricter hunting and fishing regulations and enforcement. Another 18 comments called for reduced hunting, 12 comments called for reduced fishing, while six comments called for reduced or prohibited nonresident hunting. Seventeen comments indicated a need for more fish stocking.

In terms of general importance of fish and wildlife resources, 13 comments indicated that fish and wildlife are very important, 11 comments indicated that fish and wildlife must be saved for future generations, 10 comments indicated that fish and wildlife in wilderness areas provides peace, pleasure, and relaxation, 9 comments stated that fish and wildlife are important for recreational and educational reasons, and 7 comments stated that Alberta should be kept as natural as possible.

A need for more camping and other related facilities was registered in 9 comments. Six comments related to each of the following: enough fish and wildlife are already extinct; action should be taken now to stop further fish and wildlife population declines; and a "balance of nature" should be maintained. Various

other comments made up the balance of the total number and are summarized in Appendix 8.2, Table 28.

4.8 AOSERP STUDY AREA ACTIVITY

Among the 573 resident provincial survey respondent families who engaged in nonconsumptive recreational fish and wildlife activities at least once in the AOSERP study area (Appendix 8.2, Table 30). The estimated total number of Alberta families active in the study area during 1975 is 17,420 (Figures 1 and 2 and Table 3) for a total of 50,170 individuals over the age of 5 years (3.6 per cent of the provincial total). The average annual number of hours involved is 38.3 per family, or 13.3 hours per person, bringing the annual total amount of time spent in nonconsumptive recreational fish and wildlife activity to 667,145 hours (Table 3) or 83,390 days. Based on $3.00 per person per day in benefits, the annual total benefits received by the 50,170 individuals active in the area in nonconsumptive recreational fish and wildlife activity was $250,180.

Those provincial survey respondents active in the study area were asked to rate their nonconsumptive recreational fish and wildlife experiences in relation to their province-wide experiences. Among the ratings provided, 82.4 per cent rated study area experiences as good as (47.1 per cent) or better than (35.3 per cent) their provincial experiences as a whole (Appendix 8.2, Table 31). The remaining respondents, 17.6 per cent, rated their study area as worse than their provincial experiences as a whole.

Of the three broad categories of birds, animals and aquatic life, the recreationists active in the study area most strongly preferred animals as a group (59.6 per cent), including bear (19.3 per cent), deer (13.1 per cent), moose (10.8 per cent), squirrel (4.5 per cent), elk (4.1 per cent) and other animal species (7.9 per cent). These same recreationists prefer bird life as a group the second strongest (24.1 per cent) including goose (7.7 per cent), duck (4.1 per cent), all birds (3.2 per cent) and other bird species (9.2 per cent). Their preferences for aquatic life as

a group (15.4 per cent) included yellow walleye (4.9 per cent), arctic grayling (3.6 per cent), great northern pike (3.6 per cent) and other aquatic life species (3.4 per cent). Preferences among the three broad groups (animal life followed by bird life followed by aquatic life) presented here are not only in the same order as those province wide, but the percentages are virtually identical (Appendix 8.2, Table 25). However, preference rankings for individual species vary in large part due to the differences in species availability for nonconsumptive use between the study area and the Province as a whole. In the study area recreationists involved in nonconsumptive fish and wildlife activity like to see (in order of preference) the following species: bear, deer, moose, goose, yellow walleye, squirrel, duck, elk, arctic grayling and great northern pike. Other species are given in Appendix 8.2, Table 32.

The geographical distribution of nonconsumptive recreational fish and wildlife activity in the area by provincial residents was primarily concentrated in grid locations 9 and 10 (Figure 3). Over 85 per cent of the families were active in grid location 9 and approximately one half of the families in grid location 10 (Appendix 8.2, Table 33). Approximately one third of the families were active in grid location 6 and 25 per cent were active along the Athabasca River (grid locations 1, 4, 5, 6, 7, 9 and 10).

Comments on the importance of fish and wildlife resources were solicited. Sixteen respondents provided comments, some of which came from recreationists who were not active in the study area. These comments are summarized in Appendix 8.2, Table 34. Of particular note is the fact that 14.3 per cent of the comments call for strict control of waste disposal.

4.9 SUMMARY

Among the approximately 580,756 provincial families during 1975 the average family size was 3.2 persons, the head of household average age was 41.85 years, and the spouse average age was 39.80

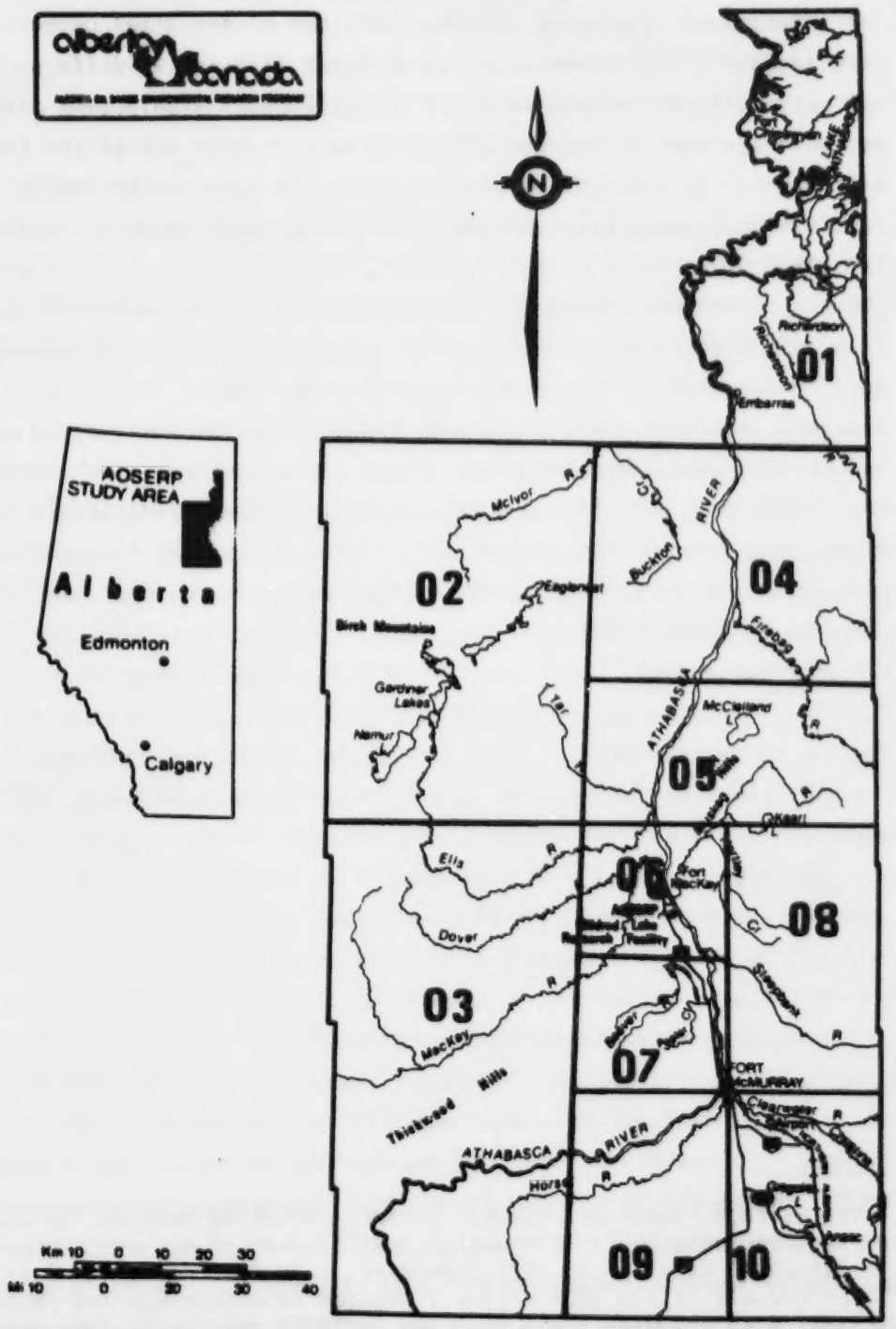

Figure 3. Map of AOSERP study area grids.

years, child average age was 11.20 years and average family income was $17,677. An estimated 482,980 families, of the total number, were engaged in nonconsumptive recreational fish and wildlife activity. The activities involved 1,390,980 individuals over five years of age who, on average, spent 12 days in such activities for a provincial total of 16,678,600 hours during 1975.[1] The annual benefits associated with these activities amounted to an estimated $50,035,800.

The individuals involved in nonconsumptive recreational fish and wildlife enjoyment liked to see (in order of preference): deer, moose, trout, elk, bear, bighorn sheep, goose, owl, duck, pheasant, mountain goat, pronghorn antelope, yellow walleye, hawk, squirrel, beaver, eagle, coyote, grouse, bison, yellow perch, great northern pike, robin, fox and other species. These individuals also engaged in nonconsumptive fish and wildlife activities in association with other activities, notably, driving for pleasure, picnicing, camping, fishing, hiking and boating.

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[1] The average number of days per person, including both active and inactive individuals in Alberta, over 5 years of age was approximately 10 days during 1975. However, only 83.2 per cent of all individuals (1,390,980) actively engaged in nonconsumptive recreational fish and wildlife activities in 1975, thus increasing the average amount of time to 12 days per active person.

5. AOSERP STUDY AREA SURVEY RESULTS

Among the 410 interviews taken (Table 1) in the AOSERP study area (Figure 1), 307 were with household residents selected from an estimated population of 4,747 households (6.47 per cent) and 103 were with camp residents selected from an estimated population of 6.040 GCOS and Syncrude camp residents (1.71 per cent). Since the percentage sampled from each population group differed, the detailed results contained in Appendix 8.3 were not combined, in order to permit inferences to be made about the populations of each group.

5.1 SOCIOECONOMIC CHARACTERISTICS

The average length of time household respondents resided in the study area was 3.4 years with one half having resided there less than 1.5 years at the time of the interviews during the summer of 1976 (Appendix 8.3, Table 35). The average length of residence in the study area by camp respondents was even less--0.9 years with one half having been there 0.2 years or less. This posed some difficulties concerning interview format, since initially, information pertaining to the 1975 calendar year was to be gathered. This format had to be abandoned and, unlike the provincial survey which sought and utilized 1975 information for the Province, study area resident information is generally more current (1975-76).

The 103 camp respondents (a portion of whom are married but have their immediate families living elsewhere outside of the study area who therefore are not considered in the survey results) were distributed among 10 occupation categories of which tradesmen accounted for 50.0 per cent, labourers for 16.7 per cent and operative occupations for 12.7 per cent with the remaining occupation categories accounting for less than 10 per cent each (Appendix 8.3, Table 36). Of the 307 household respondents, 231 indicated having spouses (75.2 per cent). The household respondents themselves were distributed among 16 occupation categories of which homemaker accounted for 33.6 per cent and tradesmen 12 per cent with the remaining categories accounting for less then 10 per cent each

(Appendix 8.3, Table 36). The spouses of respondents are distributed among 17 occupation categories of which 16.7 per cent are trademen, 15.3 per cent are homemakers and 10.2 per cent are working in professional and technical occupations with the remaining occupation categories accounting for less than 10 per cent each. Among the 410 interviewees, 164 were female and the remaining 246 male.

Family size discussed here excludes the 103 camp residents in the survey sample for whom family size is considered 1.00 for purposes of the study area even though many have immediate families outside of the study area. Family sizes of household residents ranged from one to nine persons, the average size being 3.06 persons. The mode was 1.00 persons, the median 2.97 persons, and the sample standard deviation 1.70 persons (Appendix 8.3, Table 37). Of the 307 respondents, 24.8 per cent had no spouse, 41 per cent had no children, 19.2 per cent had one child, 19.2 per cent had two children, 13.4 per cent had three children, and 7.2 per cent had more than three children (Appendix 8.3, Table 40). The average number of children living at home per respondent was 1.3 and the average number of children per respondent with children living at home was 2.2. Among the total number of children living at home (400 in the sample), 62.5 per cent (or 250 children in the sample) were over five years of age (Appendix 8.3, Table 41). The reason for making a distinction between children five years or under and children over five years of age relates to the fact that fish and wildlife enjoyment activities discussed below include only respondents, spouses, and children over five years of age.

Many family households also have other household members living with them. The average household size is 3.18 persons which is slightly larger than the average family size (3.06 persons). The household size range is from one to nine persons per household, the mode is 1.00, the median is 3.10 and the standard deviation is 1.68 persons (Appendix 8.3, Table 38).

The ages of camp residents ranged from 16 to 60 years with an average age of 31.22 years. The median age was 27.00 years, the modal ages, 22.00 and 23.00 years, and the sample standard deviation,

10.97 years (Appendix 8.3, Table 39). The ages of household resident respondents ranged from 17 to 66 years with an average age of 31.97 years and with a median age of 29.32 years, a modal age of 23.00 years, and a sample standard deviation of 10.99 years. The ages of spouses of household resident respondents ranged from 16 to 62 years with an average age of 33.89 years and with a median age of 31.90 years, a modal age of 36.00 years, and a sample standard deviation of 18.86 years (Appendix 8.3, Table 39). The ages of other non-family household members averaged 27.83 years with a median, mode, and standard deviation of 22.67 years, 19.00 years, and 20.92 years respectively (Appendix 8.3, Table 42). The average age of household resident adults was 32.79 years of age. The average adult age of household and camp resident adults combined was 32.34 years of age for the study area.[1] The average age per child was 8.20 years with a median of 8.00 years, a mode of 1.00 years and a sample standard deviation of 5.29 years (Appendix 8.3, Table 41).

The distribution of formal education of camp resident survey respondents indicates that 25.7 per cent attained high school matriculation, 21.9 per cent had at least one year of university and 21.8 per cent completed at least one year of formal technical training, bringing the total to 69.4 per cent. Among the camp residents, 97.0 per cent had at least seven years of formal education (Appendix 8.3, Table 43). The distribution of formal education of household resident survey respondents indicates that 28.0 per cent attained high school matriculation, 23.1 per cent had at least one year of university and 5.9 per cent completed at least one year of formal technical training, bringing the total to 57.0 per cent. Of the household resident respondents, 98.4 per cent had at least seven years of formal education. The distribution of formal education of spouses of household resident survey respondents indicates that 29.2

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[1] This is a weighted average based on an estimated 6,040 camp residents and an estimated 15,107 adult household residents in the study area.

per cent attained high school matriculation, 22.6 per cent had at least one year of university and 5.8 per cent completed at least one year of formal technical training, bringing the total of 57.6 percent. Among the spouses, 98.0 per cent had at least seven years of formal education (Appendix 8.3, Table 43).

Approximately one third (35.4 per cent) of camp residents had annual family incomes during 1975 between $10,000 and $20,000. The average income was $14,896 which may be low for the study area due to the fact that most camp residents did not reside there during 1975 but came there seeking employment during 1975 and 1976 and/or were seasonal help, such as students. Furthermore, the unemployment rate may have been higher for this group (prior to their arrival) than the rate currently existing for the study area. The median and modal incomes were both $12,500 and the sample standard deviation was $8,477 (Appendix 8.3, Table 44). Annual family income for household residents in 1975 was somewhat higher with 37.9 per cent having received incomes between $10,000 and $20,000. The average family income was $18,653 with a median of $17,500, modes of $12,500 and $22,500, and a standard deviation of $9,630. The annual average family income for both groups combined in the study area was $17,000 per family per year.[1] The average annual income per capita was $8,672.[2] Once again, these figures may be low considering the fact that most respondents were not in the area during the whole of 1975.

In summary, a typical camp resident in the study area is 31 years of age, has achieved 12 years of formal education, has lived in the area less than one year and has received an annual income of at least $15,000 per year. A typical household resident is

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[1] This average is weighted by the estimated 4,747 family households and the estimated 6,040 camp residents in the area during 1975-76.

[2] Among the 10,787 household units (4,747 + 6,040 in the footnote above) there were an estimated 21,147 individuals for an average of 1.96 persons per household unit upon which the average annual per capita figure of $8,672 is based.

33 years of age with a spouse of approximately the same age and with one child averaging 8 years of age. Both household resident and spouse have achieved 12 years of formal education, have lived in the study area 3 to 4 years and received an annual family income of $18,653.

5.2 FISH AND WILDLIFE ENJOYMENT ACTIVITY PREFERENCES

Fish and wildlife enjoyment in this report refers to nonconsumptive recreational use of birds, animals, and aquatic life involving such activities as observation, study and photography. Study area residents are engaged in such activities all year round although there are seasonal preferences. Among the camp residents, 31.0 per cent preferred summer over other seasons of the year for fish and wildlife enjoyment. Another 30.0 per cent had a preference for year round involvement while an additional 12.0 per cent preferred fall and an additional 10 per cent preferred summer-fall. Remaining preferences for spring and winter and other season combinations were 5.0 per cent or less (Appendix 8.3, Table 45). Nonconsumptive recreational fish and wildlife activities among study area household residents where there is a strong family representation also take place year round but with a very strong preference for summer (52.6 per cent) over other seasons. Another 12.8 per cent preferred year round involvement while an additional 10.9 per cent preferred fall. Remaining preferences for other seasons or season combinations were less than 5.0 per cent each (Appendix 8.3, Table 45).

In terms of whether or not fish and wildlife are actively sought, 37.9 per cent of camp residents actively seek out fish and wildlife during outdoor activities, with an additional 29.1 per cent actively seeking fish and wildlife sometimes, and the remaining 33.0 per cent not actively seeking, but accidently seeing, fish and wildlife (Appendix 8.3, Table 46). Among household residents only 20.5 per cent seek fish and wildlife actively with an additional 33.2 per cent seeking fish and wildlife actively sometimes. Nearly half (46.3) of the household residents do not actively seek but

accidently see, fish and wildlife (Appendix 8.3, Table 46).

The importance of seeing fish and wildlife during outdoor activities varies among camp residents with 43.7 per cent designating the sighting to fish and wildlife as extremely important, 43.7 percent as moderately important, 3.9 per cent as of neutral importance, 4.9 per cent as moderately unimportant, and 1.9 per cent as not important at all (Appendix 8.3, Table 47). Household residents tend to place less importance on seeing fish and wildlife during outdoor activities with only 27.0 per cent designating the sighting of fish and wildlife as extremely important, 47.9 per cent as moderately important, 17.3 per cent as of neutral importance, 4.9 per cent as moderately unimportant, and 2.9 per cent as not important at all (Appendix 8.3, Table 47).

Fish and wildlife enjoyment is, in part, a function of accessibility, a feature lacking in the study area according to many resident responses. The importance of accessibility in fish and wildlife enjoyment was revealed in the interviews. Among camp residents, 61.2 per cent would go more often to places where fish and wildlife might be found if there was greater access, while another 31.1 per cent would go as often with greater access, and another 1.9 per cent would go less often with greater access (Appendix 8.3, Table 52). Among household residents, 69.1 per cent would go more often to places where fish and wildlife might be found if there was greater access, while another 26.1 per cent would go as often with greater access. Virtually no one (0.3 per cent) among household residents would go less often with greater access (Appendix 8.3, Table 52). Of the different types of accessibility, trails are most desired (26.2 per cent for camp residents and 23.5 per cent for household residents) followed by roads (18.4 per cent and 16.0 per cent) and a combination of trails and roads (6.8 per cent and 9.8 per cent). Some residents prefer that no more access be developed (6.8 per cent and 3.4 per cent). Other types of access desired represent 2.0 per cent or less (Appendix 8.3, Table 53).

Current industrial development in the Fort McMurray area of the study area appears to be displacing habitat. Survey respondents were asked to give their perceptions of fish and wildlife disappearances from the area in and around Fort McMurray. The majority of both camp residents (55.3 per cent) and household residents (64.8 per cent) indicated that fish and wildlife are disappearing while a small minority of both camp residents (5.8 per cent) and household residents (10.7 per cent) indicated fish and wildlife are not disappearing. Most of the remaining area residents do not know whether or not fish and wildlife are disappearing from the Fort McMurray area (Appendix 8.3, Table 54). Of those camp residents who indicated that fish and wildlife are disappearing from the area, 10.5 per cent are extremely concerned, 29.8 per cent are moderately concerned, 14.0 per cent have neutral concern, 17.5 per cent are moderately unconcerned, and 28.1 per cent are not at all concerned (Appendix 8.3, Table 55). Those household residents who indicated that fish and wildlife are disappearing from the area are generally more concerned than camp residents, with 18.1 per cent extremely concerned, 32.2 per cent moderately concerned, 19.6 per cent neither concerned nor unconcerned, 13.6 per cent moderately unconcerned, and 16.6 per cent not at all concerned (Appendix 8.3, Table 55).

Of those study area residents who experienced fish and wildlife enjoyment in both the area and elsewhere in Alberta, one half of both camp and household residents rated their nonconsumptive fish and wildlife enjoyment experiences in the study area as worse than their province-wide experiences (Appendix 8.3, Table 60). Approximately one quarter of the remaining residents rated their study area experiences as good as their province-wide experiences and approximately one quarter of the remaining residents rated their study area experiences as better than their province-wide experiences.

In summary, both camp and household residents tend to prefer the summer over other seasons of the year for fish and wildlife enjoyment; they tend to actively seek fish and wildlife at least part of the time during their outdoor activities, tend to

place moderate to extreme importance in seeing fish and wildlife during their outdoor activities, would tend to go more often to places where fish and wildlife might be found if there was greater access. They would, among the different types of access, like to see more roads and trails, and they generally perceive fish and wildlife as disappearing from the Fort McMurray area. Camp residents tend to be neutral or unconcerned about their disappearance whereas household residents tend to be neutral or moderately concerned about this disappearance. Both resident groups tend to rate their fish and wildlife enjoyment experiences in the study area as worse than their province-wide experiences.

5.3 SPECIES PREFERENCES

Among the three broad categories (birds, animals and aquatic life) in the study area, camp residents most strongly preferred animals as a group (66.74 per cent) including deer (11.80 per cent), moose (10.94 per cent), bear (10.63 per cent), wolf 6.33 per cent), lynx (2.94 per cent), fox 2.56 per cent), squirrel (2.24 per cent), beaver (2.22 per cent), and other animal species (17.07 per cent) (Appendix 8.3, Table 49). Camp residents preferred bird life as a group the second strongest (21.32 per cent) including loon (2.71 per cent), goose (2.11 per cent), hawk (2.11 per cent), grouse (2.02 per cent), and other bird species (12.37 per cent). Aquatic life as a group was the third preference (5.02 per cent). The remaining miscellaneous groups of species (6.93 per cent) included all species combined and amphibians and reptiles. Among the three broad categories of birds, animals and aquatic life in the study area, household residents also most strongly preferred animals as a group (72.12 per cent) including bear (13.34 per cent), deer (13.03 per cent), moose (12.50 per cent), squirrel (5.34 per cent), wolf (3.62 per cent), beaver (3.18 per cent), lynx (2.40 per cent), rabbit (2.21 per cent), chipmunk (2.18 per cent), caribou (2.17 per cent), fox (1.75 per cent), coyote (1.23 per cent), elk (1.14 per cent), and other animal species (8.03 per cent) (Appendix 8.3, Table 48). Household residents also preferred bird life as a group the second

strongest (14.64 per cent) including duck (1.09 per cent), goose (1.06 per cent) and other bird species (12.49 per cent). Household residents' preferences for aquatic life as a group (3.73 per cent) included trout (1.09 per cent) and other aquatic life (2.65 per cent). Miscellaneous species or groups of species accounted for 9.34 per cent and non-Alberta species, 0.17 per cent.

In addition to providing preferences for species which they like to see in the study area, residents also indicated their preferences of species for which they would like to see increased populations. Preferences for different fish and wildlife species are in part dependent upon species availability. However, there are preferred species for which populations are such that non-consumptive enjoyment opportunities are substantially restricted and increased populations are desired. The fact that the results presented below are at variance with preference results presented tends to substantiate this premise.

Among the three broad categories of birds, animals and aquatic life, camp residents showed their strongest preference for increased animal life populations (77.08 per cent) but the species rankings differ from the rankings presented above. Increased animal life population preferences include deer (14.88 per cent), wolf (10.07 per cent), bear (8.28 per cent), lynx (7.16 per cent), caribou (6.71 per cent), moose (5.82 per cent), beaver (3.24 per-cent), otter (2.24 per cent), rabbit (2.24 per cent), squirrel (2.24 per cent), fox (2.13 per cent), and other animal species (12.08 per cent) (Appendix 8.3, Table 51). Deer ranked first in both preference scales (like-to-see and increase-population). Wolf, lynx, caribou, beaver, otter, and rabbit all increased their preference position in the increased-population scale over the like-to-see scale, whereas moose, squirrel, and fox preferences did the opposite and bear remained unchanged (Appendix 8.3, Tables 49 and 51). Household residents also showed their strongest preference for increased animal life populations (76.96 per cent) including deer (19.77 per-cent), moose (12.54 per cent), bear (8.30 per cent), caribou (5.71 per cent), fox (4.59 per cent), wolf (3.95 per cent), beaver (3.81

per cent), rabbit (2.78 per cent), lynx (2.54 per cent), elk (2.49 per cent), squirrel (2.49 per cent), bison (1.95 per cent), and other animal species (6.05 per cent) (Appendix 8.3, Table 50). Deer, moose, caribou, fox, elk, and bison all increased their preference position in the increased-population scale over the like-to-see scale, whereas bear, wolf, beaver, lynx, and squirrel preferences did the opposite and rabbit remained unchanged (Appendix 8.3, Tables 48 and 50).

Camp residents showed their second strongest preference for increased populations (17.00 per cent) in bird life, including grouse (3.02 per cent), eagle (2.35 per cent), pelican (2.01 per cent), and other bird species (9.62 per cent) (Appendix 8.3, Table 49). All three species, grouse, eagle, and pelican increased their preference position in the increased-population scale over the like-to-see scale whereas loon, goose, and hawk did the opposite (Appendix 8.3, Tables 49 and 51). Household residents also have their second strongest preference for increased bird life populations (12.93 per cent) including goose (1.42 per cent), duck (1.27 per cent), ptarmigan (1.07 per cent), and other bird species (9.18 per cent) (Appendix 8.3, Table 50). Duck and ptarmigan increased their preference position in the increased-population scale over the like-to-see scale whereas goose did the opposite (Appendix 8.3, Tables 48 and 50).

Camp residents stated their third strongest preference for increased aquatic life populations (2.01 per cent) which is a smaller proportional representation than in the like-to-see scale (5.02 per cent) (Appendix 8.3, Tables 49 and 51). Household residents also indicated their third strongest preference for increased aquatic life populations (3.37 per cent) which is only a slightly smaller proportional representation than in the like-to-see scale (3.73 per cent) (Appendix 8.3, Tables 48 and 50).

In summary, study area camp residents like to see, in order of preference, the following species: deer, moose, bear, wolf, lynx, loon, fox squirrel, beaver, goose, hawk, and grouse (Appendix 8.3, Table 49). Area household residents like to see, in order of preference, the following species: bear, deer, moose, squirrel,

wolf, beaver, lynx, rabbit, chipmunk, caribou, fox, coyote, elk, duck, trout, and goose (Appendix 8.3, Table 48). Camp residents would like to see, in order of preference, increased populations in the following species: deer, wolf, bear, lynx, caribou, moose, beaver, grouse, eagle, otter, rabbit, squirrel, fox, and pelican (Appendix 8.3, Table 51). Household residents would like to see, in order of preference, increased populations in the following species: deer, moose, bear, caribou, fox, wolf, beaver, rabbit, lynx, elk, squirrel, bison, goose, duck, and ptarmigan (Appendix 8.3, Table 50).

5.4 TIME, LOCATION AND ASSOCIATED ACTIVITIES OF FISH AND WILDLIFE ENJOYMENT

Among the estimated 6,040 camp residents in the study area (Table 1), 51.5 per cent or 3,111 were active in fish and wildlife enjoyment in the area. There were also an estimated 4,747 family households of which 82.4 per cent or 3,912 were active in fish and wildlife enjoyment in the study area. These households represented 10,537 active individuals (that is, adults and children over 5 years of age). This number plus the number of active camp residents brings the total number of study area resident individuals who actively engaged in nonconsumptive recreational fish and wildlife activities to 13,648. Each individual spent an average of 4.00 days per year in such activity in the area bringing the total number of days to 54,592.[1]

Much of this time was spent during trips within the study area away from residence. Active GCOS and Syncrude (Bechtel) camp residents, in addition to fish and wildlife enjoyment at places of residence and work, visited an array of other study area locations where nonconsumptive fish and wildlife activity also took place.

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[1] During the interviews it was difficult to obtain a precise indication of annual fish and wildlife enjoyment time since many individuals had only resided there a short time. While this information was not suitable for detailed presentation it did, along with provincial survey data, provide a basis from which the 4 days per person per year figure was estimated.

Among the most frequented locations were Gregoire Lake (35.2 per cent of all active individuals), and Anzac (22.2 per cent) in grid location 10 (Figure 3 and Appendix 8.3, Table 62), and Fort MacKay (31.5 per cent) in grid location 6. Activity along the MacKay River (24.1 per cent) in grid locations 3, 5, 6, and 7; along the Athabasca River (16.7 per cent) in grid locations 1, 3, 4, 5, 6, 7, and 9; and along the Hangingstone River (11.1 per cent) in grid locations 7 and 9 were also notably frequented. Other locations and their visitation proportions by active camp residents are given in Appendix 8.3, Table 62. Active household individuals, in addition to fish and wildlife enjoyment at home (i.e. Fort McMurray for virtually all household individuals) and often as family units, visited a variety of other locations in the study area were non-consumptive fish and wildlife activity also took place. Again, most notable in Gregoire Lake (72.6 per cent) of active individuals and Anzac (36.5 per cent) which are both in grid location 10 (Figure 3 and Appendix 8.3, Table 61). Other frequented locations included Hangingstone River (19.6 per cent) in grid locations 7 and 9, and Fort MacKay (15.3 per cent) in grid location 6. Other locations and their visitation proportions by active household residents are given in Appendix 8.3, Table 61.

Nonconsumptive recreational use of fish and wildlife through observation and study by recreationists generally takes place in association with other outdoor recreation activities. Active camp residents listed as main reasons for outings (in order of declining frequency) fishing, hunting, camping, driving for pleasure, hiking, and exploring as activities associated with nonconsumptive fish and wildlife enjoyment in the study area. Other activities are given in Appendix 8.3, Table 64. Active household residents listed as main reasons for outings (in order of declining frequency) fishing, driving for pleasure, camping, hunting, picnicing, hiking, snowmobiling, exploring, cross-country skiing, and boating as activities associated with nonconsumptive fish and wildlife enjoyment in the study area. Other activities are given in Appendix 8.3, Table 63. Individuals and families typically engaged in more than one associated activity

during are given outing, (e.g. fishing, camping, driving for pleasure, and hiking) may all have been part of a single outing involving nonconsumptive fish and wildlife enjoyment. Two of the associated activities involved consumptive use of fish and wildlife, namely hunting and fishing activities.[1] Area survey respondents were asked whether or not at least one family member engaged in hunting during the 1975 season to which 29 per cent of camp residents and 25 per cent of household residents answered in the affirmative (Appendix 8.3, Table 65). The survey respondents were also asked whether or not at least one member of their family engaged in fishing during the 1975-76 season to which 58 per cent of camp residents and 64 per cent of household residents answered in the affirmative (Appendix 8.3, Table 66). Among the estimated 18,828 study area residents over five years of age, 13,648 engaged in nonconsumptive fish and wildlife activities. Of this total, approximately 14.6 per cent or 2,000 also engaged in hunting activity during 1975, of which 1,151 hunted during 1975 (Volume 3, page 46)[2] and an estimated 31.9 per cent, or 6,000, also engaged in fishing activity during 1975-76 of which approximately 4,000 fished in the study area during 1975-76.[3] Among the 4,000 active resident anglers, 2.503 were licensed anglers (Volume 2, page 38).[4]

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[1] These two activities by license holders are discussed in detail in Volumes 2 and 3 of this series.

[2] Many of the 2,000 hunters did not reside in the study area during 1975 and hunted elsewhere.

[3] Many of the 6,000 anglers did not reside in the study area during 1975 and fished elsewhere.

[4] Children and senior citizens are not required to hold an angling license to engage in fishing activity.

During their outdoor recreation activities at different locations within the study area, active residents saw a wide variety of fish and wildlilfe species, including unspecified bird species, bear, raven, moose, duck, squirrel, unspecified fish species, deer, goose, wolf, coyote, beaver, gull, chipmunk, fox, ptarmigan, hawk, robin and many others. A listing of those species of fish and wildlife actually sighted by survey respondents and proportions of times listed are given in Appendix 8.3, Table 67.

Different modes of travel were used by residents on outdoor recreation trips within the study area. By far the largest number of residents used cars or trucks (79.2 per cent of active camp residents and 90.7 per cent of active household residents). Other modes of transportation, including hiking, motorboat, aircraft, snowmobile, canoe or row boat, jet boat, motorbike and four-wheel drive or A.T.V. each accounted for 5.2 per cent or less and are given in Appendix 8.3, Table 68.

Each active camp resident made an average of 11.98 outdoor recreation trips per year, involving an approximate average of 2 days per trip during which nonconsumptive recreational fish and wildlife activities away from camp residence were engaged in. The average round-trip distance per trip was 57.3 miles. Costs per trip ranged from $0.00 to $900.00 with an average of $20.59 per trip. The mode and median were both $0.00 and the standard deviation was $91.77 (Appendix 8.3, Table 69). Each active household resident, often with other family members, made an average of 17.34 outdoor recreation trips per year, involving an approximate average of 2 days per trip during which nonconsumptive recreational fish and wildlife activities away from residence were engaged in. The average round-trip distance per trip was 54.6 miles. Costs per trip ranged from $0.00 to $990.00 with an average of $14.69 per trip. The mode and median were both $5.00 and the standard deviation was $66.82 (Appendix 8.3, Table 69).

In summary, an estimated 13,648 resident individuals over five years of age spent an estimated 54,592 days in nonconsumptive recreational fish and wildlife activities. Much of this time was spent during outdoor recreation trips within the study area away

from residences, notably at Gregoire Lake, Anzac, Fort MacKay, and along the Athabasca River. Associated activities on these trips included fishing, driving for pleasure, camping, hunting, hiking, and exploring. A wide variety of fish and wildlife species were sighted, including unspecified bird species, bear, raven, moose, duck, squirrel, unspecified fish species, deer, goose, wolf, coyote, beaver, gull, chipmunk, fox, ptarmigan, hawk, robin, and many others. The dominant mode of travel on these trips was car or truck. Approximately 15 such trips were made per year involving an average of two days per trip, an average round-trip distance of approximately 55 miles per trip, and an average cost of approximately $17.00 per trip.

5.5 BENEFITS

Extramarket benefit is the value of a day's nonconsumptive fish and wildlife enjoyment by a resident person, over and above what is spent (if anything) on travel and other nonconsumptive fish and wildlife recreational expenses. Among the estimated 21,147 individuals residing in the study area the average extramarket benefit per person per day was $3.61 for bird life, $4.48 for animal life, and $3.12 for aquatic life (Table 4). The extramarket benefits per person per day for all species combined was $3.83. Based on the estimated total of 54,592 days spent by residents engaging in nonconsumptive recreational fish and wildlife activities, the annual total extramarket benefits from these activities, amounts to $209,087. Since recreation fees, a portion of which is allocated to fish and wildlife enjoyment, are either absent or at best quite nominal, this figure also represents the annual value of fish and wildlife derived from these activites. These annual benefits do not include the recreational or option values of fish and wildlife resources to those area residents who do not engage in nonconsumptive recreational fish and wildlife activities nor the recreational or option value to other Canadians or non-Canadians. Furthermore, it does not include the values of the fish and wildlife resources from recreational consumptive uses (fishing and hunting), commercial uses and other non-recreational uses.

Table 4. Average extramarket benefits per person per day for study area residents from nonconsumptive recreational fish and wildlife activities in the AOSERP study area.

Resident Group[a]	Birds	Animals	Aquatic Life	All Species Combined
Adult Household Residents	$2.74	$3.83	$2.64	$3.15
Child Household Residents[b]	1.12	1.47	1.00	1.23
Adult Camp Residents	6.47	7.33	5.16	6.49
All Individuals[c]	3.61	4.48	3.12	3.83

SOURCE: Appendix 8.3, Tables 56, 57 and 58.

[a] Includes both active and inactive residents regarding nonconsumptive recreational fish and wildlife activity.

[b] Includes only children over 5 years of age.

[c] Weighted by the proportion of each group in the study area resident population.

In order to get an indication of fish and wildlife values which not only includes nonconsumptive recreational values but also other values such as option and consumptive values, survey respondents were asked to indicate their benefits or willingness to pay per year to ensure that fish and wildlife are preserved in the study area. The annual average preservation benefit per household respondent was $94.75 and the annual average preservation benefit per camp resident was $165.71 per year. The overall average was $123.13 per year per resident adult or an annual total preservation benefit of approximately $2,000,000.

5.6 COMMENTS

Each interviewee was invited to make comments which would help in an evaluation of the importance of fish and wildlife resources in the study area. Among the 103 camp resident respondents, 22 gave no comment, 27 gave one comment and 54 gave two comments for a total of 135 comments (Appendix 8.3, Table 71). Among this total number of comments: 18 called for much more pollution control and other environmental protection; another 13 comments indicated a need for more recreation facilities; ten comments each related to the need for more parks and reserves; and to the need for more and improved access to the study area. Among the remaining comments: 9 indicated a need for more fish and wildlife conservation; 8 indicated that fish and wildlife in the study area are priceless; 7 indicated that the area should be preserved in its natural state; 6 indicated that more access is not desirable; and 6 comments called for reduced and controlled fish and wildlife harvest, particularly hunting. Various other comments made up the balance of the total number and are summarized in Appendix 8.3, Table 71.

Among the 307 household resident respondents, 52 gave no comment, 67 gave one comment and 188 gave two comments for a total of 443 comments (Appendix 8.3, Table 70). The most frequently provided comments were largely the same as those provided by camp residents. Among the total number of household resident survey comments: 76 called for more parks and reserves; 51 comments

indicated a need for more and improved access; and 50 comments called for more outdoor recreation facilities. Twenty-five comments each related to a need for much more pollution control and other environmental protection in the study area and to a need for reduced and controlled fish and wildlife harvest, particularly hunting. Another 23 comments called for more fish and wildlife conservation in the area. Twenty-two comments each indicated a need for more enforcement regarding fish and wildlife, and a need for reduced overcrowding, particularly at Fort McMurray and Gregoire Lake Provincial Park. Nineteen comments indicated a need for more education and information about fish and wildlife. Various other comments made up the balance of the total number and are summarized in Appendix 8.3, Table 70.

5.7 SUMMARY

Among the estimated 6,040 GCOS and Syncrude Camp residents, the average age was 31 years, the average number of years of formal education was 12, the average length of residence in the study area was 0.9 years and the average annual income was at least $15,000. Among the estimated 4,747 households: the average family size (living at home) was 3.06 persons; the average household size was 3.18 persons; the average adult age was 33 years; the average child age was 8 years; the average number of years of formal education for adults was 12; the average length of residence in the studyarea was 3.4 years; and the average annual family income was $18,653.

There were an estimated 18,828 individuals over 5 years of age residing in the area of whom 13,648 were engaged in nonconsumptive recreational fish and wildlife activities involving a total of 54,592 days. The annual benefits associated with these activities amounted to $209,087. Active area residents tend to: prefer the summer season over other seasons of the year for fish and wildlife enjoyment; actively seek fish and wildlife at least part of the time during their outdoor activities; place moderate to extreme importance on seeing fish and wildlife during their outdoor activities; go more often to places where fish and wildlife might be found if there was greater access; and among the different types of access, like to see more

roads and trails in the study area.

Camp residents involved in nonconsumptive recreatibnal fish and wildlife enjoyment like to see, in order of preference: deer, moose, bear, wolf, lynx, loon, fox, squirrel, beaver, goose, hawk, and other species. Area household residents involved in nonconsumptive recreational fish and wildlife enjoyment like to see, in order of preference: bear, deer, moose, squirrel, wolf, beaver, lynx, rabbit, chipmunk, caribou, fox, coyote, elk, duck, trout, goose, and other species.

Residents who engage in nonconsumptive recreational fish and wildlife activities spend much of this activity time away from residences, notably at Gregoire Lake, Anzac, Fort MacKay, and along the Athabasca River. Associated activities on these trips included fishing, driving for pleasure, camping, hunting, hiking, and exploring. The dominant mode of travel on these trips was car or truck. Approximately 15 such trips were made per year, involving an average of two days per trip, an average round-trip distance of 55 miles per trip, and an average cost of $17.00 per trip.

6. SUMMARY AND CONCLUSIONS

The focus of this study is a socioeconomic evaluation of nonconsumptive recreational fish and wildlife activity in Alberta, by Alberta residents, with particular emphasis given to the AOSERP study area. (Figure 1). Socioeconomic information is essential in the assessment of nonconsumptive recreational fish and wildlife activity. When combined with physical and biological information, it is possible to ascertain the importance of nonconsumptive recreational fish and wildlife resource uses in relation to other fish and wildlife resource uses, and in relation to other resource use patterns which may alter fish and wildlife habitat.

The study reported herein was carried out with the intent of achieving the following objectives:

1. To ascertain the socioeconomic characteristics of participants in the study area and throughout the Province;
2. To establish a detailed profile of participant nonconsumptive fish and wildlife activities in the study area and throughout the Province, particularly with regard to activity locations, durations and species of fish and wildlife;
3. To determine the number of recreation days expended in these activities by Albertans in the study area and throughout the Province;
4. To examine the desirability of different species of fish and wildlife in the study area and throughout the Province;
5. To estimate the value of fish and wildlife resources used for nonconsumptive recreational purposes in the study area and throughout the Province.

The results obtained in meeting these objectives are summarized here. The results pertaining to the first objective are presented under the heading "Socioeconomic Characteristics". The results pertaining to the second, third, and fifth objectives are presented under "Nonconsumptive Recreational Fish and Wildlife

Activity Days and Benefits," "Locations of Fish and Wildlife Enjoyment Activities", and "Other Activities Associated with Fish and Wildlife Enjoyment". The results pertaining to the fourth objective are presented under the heading "Species Preferences".

Two questionnaires were designed and utilized to obtain the information required to meet the objectives of this study (Appendix 8.1). One was a mail questionnaire for a randomly cited systematic sample of 3,641 recipients from the estimated 580,756 Alberta households during 1975. The initial mailing to sample recipients was followed by a second mailing to nonrespondents of the initial mailing. The combined response of first and second mailings was 807 (24.4 per cent) of which 689 returns were usable (Table 5). A comparison between first and second mailings for selected variables from survey results was made to see if there was evidence of non-response bias. For lack of any strong evidence to the contrary, nonresponse bias is assumed not to exist. Detailed results of the provincial survey are contained in Appendix 8.2.

The second questionnaire was an interview questionnaire for a randomly selected sample of 410 study area resident interviewees of which 103 were GCOS and Syncrude Camp residents from the estimated 6,040 such residents, and of which 307 were study area household residents from the estimated 4,747 such households (Table 5). The results of the survey are contained in Appendix 8.3.

6.1 SOCIOECONOMIC CHARACTERISTICS

Of members of the 580,756 Alberta households during 1975, one half resided in Edmonton and Calgary with the remainder widely dispersed throughout the Province. Residents of the study area (21,147 persons) accounted for 0.96 per cent of all Alberta residents. Approximately 97.3 per cent of the AOSERP residents resided in Fort McMurray. There were an estimated 4,747 household and 6,040 GCOS and Syncrude camp residents (Table 5). The average length of residence was 0.9 years for camp residents, and 3.4 years for household residents.

Table 5. Socioeconomic characteristics of provincial and study area residents.

Item	Alberta Household Residents	AOSERP Camp Residents	AOSERP Household Residents
Number of Households or Camp Residents	580,756	6,040	4,747
Number of Survey Respondents (persons	689	103	307
Average Family Size (persons)[a]	3.20	1.00	3.06
Average Household Size (persons)	3.20	1.00	3.18
Average Adult Age (years)	40.92	31.22	32.79
Average Child Age (years)	11.20	0.00	8.20
Adult Average Formal Education (years)	12.00	12.00	12.00
Average Family Income (dollars)	$17,677.00	$14,896.00	$18,653.00
Average Length of Time at Current Residence (years)	n.a.	0.90	3.40
Total Number of Individuals Engaged in Nonconsumptive Activities (persons)	1,390,980	3,111	10,537

[a] Includes only family members living at home.

[b] Nonconsumptive activities means nonconsumptive recreational fish and wildlife activities such as observation and study. Number of individuals includes only those persons over five years of age. AOSERP figures include only those active in the study area.

Aside from AOSERP camp residents, for whom family size was considered to be one person for purposes of the survey, average family size of 3.06 persons in the study area was smaller than the provincial average of 3.20 persons (both figures including only immediate family members living at home). AOSERP resident households included non-family members as well, bringing the average household size to 3.18 persons.[1] The average adult age province-wide was 40.92 years, whereas the generally younger AOSERP adult camp and household residents averaged 31.22 and 32.79 years of age respectively. AOSERP children were also generally younger. The average age per child province-wide was 11.20 years compared to the average age per AOSERP child of 8.20 years. Both province-wide resident adults and AOSERP resident adults had achieved an average of 12 years of formal education (Table 5).

Among 17 occupation categories for provincial residents: homemaker accounted for 24.7 per cent; professional and technial occupations, 18.4 per cent; managerial occupations, 7.8 per cent; clerical occupations, 7.6 per cent; retired, 7.6 per cent; and tradesmen, 7.4 per cent. Among AOSERP household residents: homemaker accounted for 26.0 per cent; tradesmen, 14.0 per cent; operative occupations, 7.8 per cent; and professional and technical, 7.6 per cent. Among AOSERP camp residents: tradesmen accounted for 50.0 per cent; labourer, 16.7 per cent; operative occupations, 12.7 per cent; and managerial, 7.8 per cent. All other categories for the three groups of residents were less than 7.0 per cent each.

Annual average family income province-wide was $17,677 during 1975 (Table 5). Family income in the study area during the same year was higher, at $18,653. AOSERP camp residents' average income was $14,896 during 1975; however, many camp residents resided in the study area only part of 1975 and still others did not move

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[1] Since no indication of province-wide household size was ascertained, family size and household size were assumed equivalent.

there until 1976. The average income for camp residents during 1976 may be considerably higher. On a per capita basis, province-wide income was $5,524 per person, whereas AOSERP income was considerably higher at $8,442.

6.2 NONCONSUMPTIVE RECREATIONAL FISH AND WILDLIFE ACTIVITY DAYS AND BENEFITS

There were a total of 1,390,980 provincial residents over five years of age who were actively engaged in nonconsumptive recreational fish and wildlife activities in Alberta during 1975 (Tables 5 and 6). The annual total amount of time in these activities amounted to 16,678,600 recreation days (Table 6). Of this total: bird life enjoyment accounted for 34.2 per cent; animal life enjoyment accounted for 39.6 per cent; and aquatic life enjoyment accounted for 26.2 per cent. Of the 1,390,980 active Alberta residents, 50.170 individuals (3.6 per cent of the provincial total) were active in AOSERP. The annual total number of recreation days in nonconsumptive recreational fish and wildlife activity by these individuals was 83,390 days. (0.50 per cent of the provincial total).

The 50.170 provincial residents active in the study area included a total of 13,648 AOSERP residents (3,111 camp residents and 10.537 household residents) (Tables 5 and 6) who spent an annual total of 54,592 recreation days (0.33 per cent of the provincial total) in nonconsumptive recreational fish and wildlife activities. (Table 6).

Extramarket benefit is the value of a day's involvement in nonconsumptive recreational fish and wildlife activities. For provincial residents this benefit was estimated at $3.00 per person per day.[1] Based on the estimated total annual number of days in such activities the annual total extramarket benefits for all active Alberta residents was $50,035,800 (Table 6). The portion allocated

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[1] Market benefits expressed in the forms of recreation fees are considered negligible; consequently, these benefits also represent the value of fish and wildlife resources associated with non-consumptive activity.

Table 6. Nonconsumptive recreational fish and wildlife activity days and benefits of Provincial and Athabasca Oil Sands area residents.

Item		Alberta Residents	AOSERP Residents[a]
Total Number of Individuals[b] Engaged in Nonconsumptive Activities	- Alberta	1,390,980	n.a.
	- AOSERP	50,170	13,648
Annual Total Number of Days Engaged in Nonconsumptive Activities	- Alberta	16,678,600	n.a.
	- AOSERP	83,393	54,592
Annual Total Benefits from Nonconsumptive Activities	- Alberta	$50,035,800	n.a.
	- AOSERP	$250,180	$209,087

[a] AOSERP stands for Alberta Oil Sands Environmental Research Program (Figure 1).

[b] Nonconsumptive activities means nonconsumptive recreational fish and wildlife activities such as observation and study. Number of individuals includes only those persons over five years of age.

to AOSERP from provincial resident activity there is $250,180 annually (0.5 per cent of the provincial total).

The extramarket benefits per person per day for nonconsumptive recreational fish and wildlife activities by AOSERP residents averaged $3.61 for bird life, $4.48 for animal life, and $3.12 for aquatic life. The extramarket benefits for all species combined was $3.83 per person per day. Based on the estimated total annual number of days in nonconsumptive recreational fish and wildlife activities by residents in the study area the annual total benefits amounted to $209,087 (0.42 per cent of the provincial total).

6.3 LOCATIONS OF FISH AND WILDLIFE ENJOYMENT ACTIVITIES

Nonconsumptive recreational fish and wildlife enjoyment activities by provincial residents are widely dispersed throughout the Province and, for many individuals, in numerous locations. The Province was divided into five areas (Figure 2) among which total recreation days of nonconsumptive fish and wildlife activities are allocated. Area 1 is the AOSERP study area within which 50,170 individuals (3.6 per cent of the provincial total) spent 83,393 days (0.5 per cent of the provincial total) in such activities. Area 2 is northern Alberta, excluding Area 1, within which 680,751 provincial residents (48.9 per cent of the provincial total) spent 4,369,790 days (26.2 per cent of the provincial total) in such activities. Area 3 is the eastern slopes of Alberta within which 965,081 provincial residents (69.4 per cent of the provincial total) spent 5,137,005 days (30.8 per cent of the provincial total) in such activities. Area 4 is east central Alberta within which 826,250 provincial residents (59.4 per cent of the provincial total) spent 4,419,825 days (26.5 per cent of the provincial total) in such activities. Finally, Area 5 is south eastern Alberta within which 416,474 provincial residents (29.9 per cent of the provincial total) spent 2,668,574 days (16.0 per cent of the provincial total) in such activities. Location preferences by provincial residents by type of area for nonconsumptive recreational fish and wildlife

activities were strongest for mountain areas followed by forested areas, national parks, provincial parks and wilderness areas. These features typify the eastern slopes (Area 3) and, with the exception of mountain areas, typify northern Alberta (Areas 1 and 2) where, combined, nearly 60 per cent of the total activity time by provincial residents was spent.

Unlike province-wide activities, nonconsumptive recreational fish and wildlife activities by AOSERP residents were not widely dispersed but limited to a comparatively few accessible locations within the area. In addition to such activities at Fort McMurray grid locations 9 and 7, Figure 3, where virtually all AOSERP residents live, much of the total activity time was spent during outdoor recreation trips at: Gregoire Lake and Anzac, which are both in the study area grid location 10 (Figure 3); Fort MacKay (grid location 6); and along the Athabasca River which passes through grid locations 1, 3, 4, 5, 6, 7 and 9 (Figure 3). The dominant mode of travel was car or truck. Each individual, on average, made approximately 15 such trips per year involving an average of two days per trip, an average round-trip distance of approximately 55 miles per trip and an average cost of approximately $17.00 per person per trip.

6.4 ANIMAL SPECIES PREFERENCES

Provincial residents who engaged in nonconsumptive recreational fish and wildlife enjoyment activities in the Province like to see, in order of preference, the following species: deer, moose, trout, elk, bear, bighorn sheep, goose, owl, duck, pheasant, mountain goat, pronghorn antelope, yellow walleye, hawk, squirrel, beaver, eagle, coyote, grouse, bison, yellow perch, great northern pike, robin, fox, and other species. Provincial residents would like to see, in order of preference, increased populations in the following species: trout, deer, pronghorn antelope, moose, elk, arctic grayling, bear, yellow walleye, owl, bison, white pelican, duck, beaver, hawk, yellow perch, mountain goat, wolf, partridge, crane, fox, swan, and other species.

AOSERP household residents who engaged in nonconsumptive recreational fish and wildlife enjoyment activities like to see, in order of preference, the following species: bear, deer, moose, squirrel, wolf, beaver, lynx, rabbit, chipmunk, caribou, fox, coyote, elk, duck, trout, goose, and other species. Household residents would like to see, in order of preference, increased populations in the following species: deer, moose, bear, caribou, fox, wolf, beaver, rabbit, lynx, elk, squirrel, bison, goose, duck, ptarmigan, and other species.

AOSERP camp residents who engaged in nonconsumptive recreational fish and wildlife enjoyment activities liked to see, in order of preference, the following species: deer, moose, bear, wolf, lynx, loon, fox, squirrel, beaver, goose, hawk, grouse, and other species. Camp residents would like to see, in order of preference, increased populations in the following species: deer, wolf, bear, lynx, caribou, moose, beaver, grouse, eagle, otter, rabbit, squirrel, fox, pelican, and other species.

Among all the preferences just presented there is a notable presence of game species which in part may reflect a significant interest in consumptive use of fish and wildlife (hunting and fishing) as well as nonconsumptive use. Certainly, as indicated in the section below, considerable nonconsumptive recreational fish and wildlife activity is done in association with consumptive recreational fish and wildlife activity.

In association with species preferences, AOSERP residents also expressed other preferences related to their nonconsumptive fish and wildlife activities in the study area. Residents tend to: prefer the summer over other seasons of the year for fish and wildlife enjoyment; actively seek fish and wildlife at least part of the time during their outdoor activities; place moderate to extreme importance on seeing fish and wildlife during their outdoor activities; go more often to places where fish and wildlife might be found if there was greater access. Among different types of access, they would like to see more roads and trails.

6.5 OTHER ACTIVITIES ASSOCIATED WITH FISH AND WILDLIFE ENJOYMENT

Nonconsumptive recreational use of fish and wildlife through observation and study by individuals, generally takes place in association with other outdoor recreation activities. Provincial residents included, in order of frequency, the following activities: driving for pleasure, picnicing, camping, fishing, hiking, boating, hunting, skiing, snowmobiling, and other activities. Individuals typically engaged in more than one associated activity during any given outing (e.g., driving for pleasure, picnicing, camping, fishing, and hiking) may all be part of a single family outing involving nonconsumptive fish and wildlife enjoyment. At least one person among 23 per cent of all provincial households engages in hunting and at least one person among 54 per cent of all provincial households engages in fishing, both of which constitute consumptive recreational fish and wildlife use.

Among AOSERP residents, active household residents include fishing, driving for pleasure, camping, hunting, picnicing, hiking, snowmobiling, exploring, cross-country skiing and boating, as activities associated with nonconsumptive fish and wildlife enjoyment in the study area. Active camp residents include fishing, hunting, camping, driving for pleasure, hiking and exploring as activities associated with their nonconsumptive fish and wildlife enjoyment in the study area. Approximately 27 per cent of the residents engage in hunting, and approximately 61 per cent engage in fishing, constituting consumptive recreational fish and wildlife use.

Table 7. Residences of provincial survey respondents, 1975.

Location	Number of Respondents	Percent of Total Response	Adjusted Percent of Response[a]
Not Specified	54	7.8	n.a.
Airdrie	1	0.1	0.2
Alberta Beach	1	0.1	0.2
Alliance	1	0.1	0.2
Andrew	1	0.1	0.2
Athabasca	1	0.1	0.2
Banff	3	0.4	0.5
Barons	1	0.1	0.2
Barrhead	4	0.6	0.6
Bashaw	1	0.1	0.2
Bassano	1	0.1	0.2
Beaumont	1	0.1	0.2
Beaverlodge	1	0.1	0.2
Beiseker	1	0.1	0.2
Bellevue	1	0.1	0.2
Bentley	1	0.1	0.2
Berwyn	1	0.1	0.2
Blackfalds	1	0.1	0.2
Blairmore	3	0.4	0.5
Bon Accord	1	0.1	0.2
Bonnyville	1	0.1	0.2
Bonnyville Beach	1	0.1	0.2
Bowden	1	0.1	0.2
Brooks	2	0.3	0.3
Bruderheim	1	0.1	0.2
Buck Lake	1	0.1	0.2
Cardston	2	0.3	0.3
Carson Lake	1	0.1	0.2
Champion	1	0.1	0.2
Claresholm	1	0.1	0.2
Cluny	1	0.1	0.2
Clyde	1	0.1	0.2
Coaldale	2	0.3	0.3
Cold Lake	1	0.1	0.2
Cowley	1	0.1	0.2
Didsbury	1	0.1	0.2
Drayton Valley	1	0.1	0.2
Drumheller	3	0.4	0.5
Eckville	1	0.1	0.2
Edgerton	1	0.1	0.2
Edmonton	190	27.6	29.9
Edson	2	0.3	0.3
Egremont	1	0.1	0.2
Elnora	1	0.1	0.2
Fairview	1	0.1	0.2
Falher	1	0.1	0.2
Foremost	1	0.1	0.2
Fort MacLeod	2	0.3	0.3
Fort McMurray	4	0.6	0.6
Fort Saskatchewan	7	1.0	1.1
Fox Creek	1	0.1	0.2
Girouxville	1	0.1	0.2

Continued ...

Table 7. Continued.

Location	Number of Respondents	Percent of Total Response	Adjusted Percent of Response[a]
Calgary	152	22.1	23.9
Camrose	3	0.4	0.5
Carbon	1	0.1	0.2
Grassy Lake	1	0.1	0.2
Grimshaw	1	0.1	0.2
Gunn	1	0.1	0.2
Half Moon Lake	2	0.3	0.3
Hanna	1	0.1	0.2
Hotchkiss	1	0.1	0.2
High Prairie	3	0.4	0.5
High River	2	0.3	0.3
Hillcrest Mines	1	0.1	0.2
Hinton	2	0.3	0.3
Hythe	2	0.3	0.3
Innisfail	2	0.3	0.3
Irvine	1	0.1	0.2
Jasper	1	0.1	0.2
Kinuso	1	0.1	0.2
Lacombe	1	0.1	0.2
Leduc	2	0.3	0.3
Lethbridge	20	2.9	3.1
Lloydminster (Alberta portion)	7	1.0	1.1
McLennan	1	0.1	0.2
Manning	1	0.1	0.2
Medicine Hat	22	3.2	3.5
Millet	3	0.4	0.5
Milo	1	0.1	0.2
Grande Cache	2	0.3	0.3
Grande Prairie	12	1.7	1.9
Granum	1	0.1	0.2
Okotoks	1	0.1	0.2
Olds	1	0.1	0.2
Oyen	2	0.3	0.3
Peace River	5	0.7	0.8
Picture Butte	1	0.1	0.2
Pincher Creek	2	0.3	0.3
Ponoka	3	0.4	0.5
Provost	2	0.3	0.3
Rainbow Lake	1	0.1	0.2
Redcliff	2	0.3	0.3
Red Deer	15	2.2	2.4
Rimbey	1	0.1	0.2
Rocky Mountain House	1	0.1	0.2
Rosalina	1	0.1	0.2
St. Albert	10	1.5	1.6
St. Paul	1	0.1	0.2
Sangudo	1	0.1	0.2
Sexsmith	2	0.3	0.3
Sherwood Park	16	2.3	2.5
Slave Lake	2	0.3	0.3
Spruce Grove	7	1.0	1.1
Standard	1	0.1	0.2
Stavely	1	0.1	0.2
Stirling	1	0.1	0.2

Continued ...

Table 7. Concluded.

Location	Number of Respondents	Percent of Total Response	Adjusted Percent of Response[a]
Mirror	1	0.1	0.2
Morinville	1	0.1	0.2
Mound Road	1	0.1	0.2
Nanton	2	0.3	0.3
New Sarepta	1	0.1	0.2
Taber	3	0.4	0.5
Thorhild	1	0.1	0.2
Tofield	1	0.1	0.2
Two Hills	1	0.1	0.2
Vermilion	3	0.4	0.5
Viking	1	0.1	0.2
Vilna	1	0.1	0.2
Stony Plain	4	0.6	0.6
Strathmore	1	0.1	0.2
Sundre	1	0.1	0.2
Swan Hills	2	0.3	0.3
Sylvan Lake	1	0.1	0.2
Wabasca	1	0.1	0.2
Warner	1	0.1	0.2
Wembley	1	0.1	0.2
Westlock	6	0.9	0.9
Wetaskiwin	3	0.4	0.5
Whitecourt	3	0.4	0.5
TOTAL	689	100.0	100.0

[a]Calculations are made with the exclusion of those respondents who did not indicate their residence (689 - 54 = 635).

Table 8. Occupations of provincial survey respondents, 1975.

Occupation	Respondents			Spouses of Respondents		
	Number	Percent of Total	Adjusted Percent of Total[a]	Number	Percent of Total	Adjusted Percent of Total[b]
Not Specified	10	1.5	n.a.	6	1.1	n.a.
Professional & Technical	159	23.1	23.4	66	12.0	12.1
Managerial	82	11.9	12.1	13	2.4	2.4
Contractor	5	0.7	0.7	0	0.0	0.0
Farming	48	7.0	7.1	8	1.5	1.5
Tradesmen	82	11.9	12.1	8	1.5	1.5
Transportation & Communications	13	1.9	1.9	4	0.7	0.7
Service Occupations	29	4.2	4.3	21	3.8	3.9
Sales	43	6.2	6.3	16	2.9	2.9
Operative	26	3.8	3.8	1	0.2	0.2
Armed Forces	6	0.9	0.9	0	0.0	0.0
Clerical	30	4.4	4.4	63	11.4	11.6
Labourers	34	4.9	5.0	10	1.8	1.8
Homemaker	9	1.3	1.3	293	53.2	53.8
Student	16	2.3	2.4	5	0.9	0.9

Continued ...

Table 8. Concluded.

Occupation	Respondents			Spouses of Respondents		
	Number	Percent of Total	Adjusted Percent of Total[a]	Number	Percent of Total	Adjusted Percent of Total[b]
Retired	65	9.4	9.6	28	5.1	5.1
Not in Labour Force	7	1.0	1.0	4	0.7	0.7
Miscellaneous	25	3.6	3.7	5	0.9	0.9
TOTAL	689	100.0	100.0	551[c]	100.0	100.0

[a]Calculations are made with the exclusion of those respondents who did not indicate occupations (689 - 10 = 679).

[b]Calculations are made with the exclusion of those spouses with no occupation indication (551 - 6 = 545).

[c]551 respondents had spouses.

Table 9. Family household size of provincial survey respondents, 1975.

Family Size	Number of Respondents	Percent of Total Response	Adjusted Percent of Response[a]
Not Specified	4	0.6	Not Applicable
1	99	14.4	14.5
2	179	26.0	26.1
3	114	16.6	16.6
4	143	20.8	20.9
5	99	14.4	14.5
6	28	4.1	4.1
7	14	2.0	2.0
8	5	0.7	0.7
9	4	0.6	0.6
TOTAL	689	100.0	100.0

Mean[a], 3.20; Mode[a], 2.00; Median[a], 3.04; Standard Deviation[a], 1.65.

[a]Calculations are made with the exclusion of those respondents who did not indicate family size (689 - 4 = 685).

Table 10. Ages of provincial survey respondents, 1975.

Age	Respondents			Spouses of Respondents		Combined Total	Adjusted Percent of Combined Total[a]
	Number	Percent of Total	Adjusted Percent of Total[a]	Number	Percent of Total		
Not Specified	19	2.8	n.a.	0	0.0	19	n.a.
13	0	0.0	0.0	1	0.2	1	0.1
15	1	0.1	0.1	0	0.0	1	0.1
17	0	0.0	0.0	1	0.2	1	0.1
18	2	0.3	0.3	1	0.2	3	0.3
19	2	0.3	0.3	8	1.5	10	0.8
20	7	1.0	1.0	4	0.7	11	0.9
21	10	1.5	1.5	8	1.5	18	1.5
22	18	2.6	2.7	14	2.5	32	2.6
23	17	2.5	2.5	13	2.4	30	2.5
24	16	2.3	2.4	15	2.7	31	2.5
25	16	2.3	2.4	15	2.7	31	2.5
26	17	2.5	2.5	12	2.2	29	2.4
27	15	2.2	2.2	18	3.3	33	2.7
28	14	2.0	2.1	16	2.9	30	2.5
29	21	3.1	3.1	18	3.3	39	3.2
30	18	2.6	2.7	24	4.4	42	3.4
31	23	3.3	3.4	13	2.4	36	3.0
32	20	2.9	3.0	16	2.9	36	3.0
33	21	3.1	3.1	16	2.9	37	3.0
34	13	1.9	1.9	19	3.4	32	2.6
35	16	2.3	2.4	12	2.2	28	2.3
36	21	3.1	3.1	17	3.1	38	3.1
37	11	1.6	1.6	15	2.7	26	2.1
38	20	2.9	3.0	12	2.2	32	2.6
39	14	2.0	2.1	10	1.8	24	2.0

Continued ...

Table 10. Continued.

Age	Respondents			Spouses of Respondents			
	Number	Percent of Total	Adjusted Percent of Total[a]	Number	Percent of Total	Combined Total	Adjusted Percent of Combined Total[a]
40	13	1.9	1.9	19	3.5	32	2.6
41	11	1.6	1.6	8	1.5	19	1.6
42	19	2.8	2.8	15	2.7	34	2.8
43	18	2.6	2.7	19	3.5	37	3.0
44	14	2.0	2.1	12	2.2	26	2.1
45	15	2.2	2.2	8	1.5	23	1.9
46	17	2.5	2.5	8	1.5	25	2.1
47	17	2.5	2.5	12	2.2	29	2.4
48	15	2.2	2.2	12	2.2	27	2.2
49	15	2.2	2.2	8	1.5	23	1.9
50	12	1.7	1.8	13	2.4	25	2.1
51	10	1.5	1.5	8	1.5	18	1.5
52	12	1.7	1.8	10	1.8	22	1.8
53	16	2.3	2.4	8	1.5	24	2.0
54	7	1.0	1.0	12	2.2	19	1.6
55	8	1.2	1.2	7	1.3	15	1.2
56	6	0.9	0.9	2	0.4	8	0.7
57	6	0.9	0.9	8	1.5	14	1.2
58	9	1.3	1.3	7	1.3	16	1.3
59	2	0.3	0.3	3	0.5	5	0.4
60	2	0.3	0.3	5	0.9	7	0.6
61	9	1.3	1.3	5	0.9	14	1.2
62	8	1.2	1.2	6	1.1	14	1.2
63	6	0.9	0.9	5	0.9	11	0.9
64	5	0.7	0.7	5	0.9	10	0.8
65	10	1.5	1.5	2	0.4	12	1.0
66	5	0.7	0.7	1	0.2	6	0.5

Continued ...

Table 10. Concluded.

Age	Respondents			Spouses of Respondents			
	Number	Percent of Total	Adjusted Percent of Total[a]	Number	Percent of Total	Combined Total	Adjusted Percent of Combined Total[a]
67	6	0.9	0.9	4	0.7	10	0.8
68	7	1.0	1.0	2	0.4	9	0.7
69	4	0.6	0.6	1	0.2	5	0.4
70	3	0.4	0.4	5	0.9	8	0.7
71	5	0.7	0.7	4	0.7	9	0.7
72	5	0.7	0.7	2	0.4	7	0.6
73	1	0.1	0.1	1	0.2	2	0.2
74	3	0.4	0.4	1	0.2	4	0.3
75	1	0.1	0.1	1	0.2	2	0.2
76	3	0.4	0.4	0	0.0	3	0.3
78	2	0.3	0.3	0	0.0	2	0.2
80	2	0.3	0.3	0	0.0	2	0.2
82	1	0.1	0.1	2	0.4	3	0.3
86	1	0.1	0.1	0	0.0	1	0.1
87	1	0.1	0.1	0	0.0	1	0.1
88	1	0.1	0.1	1	0.2	2	0.2
89	2	0.3	0.3	1	0.2	3	0.3
90	1	0.1	0.1	0	0.0	1	0.1
91	1	0.1	0.1	0	0.0	1	0.1
TOTAL	689	100.0	100.0	551	100.0	1,240	100.0
Mean[a]	41.85			39.80		40.92	
Mode[a]	31.00			30.00		30.00	
Median[a]	39.31			36.86		38.09	
Standard Deviation[a]	16.40			13.63		14.35	

[a]Calculations are made with the exclusion of the 19 respondents who did not indicate their age.

Table 11. Total number of children per household of provincial survey respondents, 1975.

Number of Children per Household	Number of Respondents	Percent of Total Respondents	Percent of Respondents With Children[a]	Total Number of Children
0	272	39.5	n.a.	0
1	113	16.4	27.1	113
2	149	21.6	35.7	298
3	99	14.4	23.7	297
4	33	4.8	7.9	132
5	15	2.2	3.6	75
6	5	0.7	1.2	30
7	2	0.3	0.5	14
8	1	0.1	0.2	8
TOTAL	689	100.0	100.0	967

Respondents: Mean, 1.40; Mode, 0.00; Median, 1.14; Standard Deviation, 1.47.

Respondents With Children[a]: Mean[a], 2.32; Mode[a], 2.00; Median[a], 2.00; Standard Deviation[a], 1.20.

[a]Calculations are made with the exclusion of the number of respondents who had no children living in households of respondents (689 - 272 = 417).

Table 12. Ages of children living in households of provincial survey respondents, 1975.

Age	Number of Children						Total Number of Children	Percent of Total
	Oldest Child	Second Oldest Child	Third Oldest Child	Fourth Oldest Child	Fifth Oldest Child	Sixth Oldest Child		
1	29	20	2	1	0	0	52	5.4
2	17	19	5	2	0	0	43	4.4
3	15	11	11	3	1	0	41	4.2
4	21	11	11	3	2	1	49	5.1
5	17	13	9	4	1	1	45	4.7
6	10	14	8	2	3	0	37	3.8
7	14	14	3	1	1	0	33	3.4
8	13	18	13	2	2	0	48	5.0
9	9	10	12	1	1	0	33	3.4
10	20	14	9	2	0	2	47	4.9
11	19	17	9	6	5	0	56	5.8
12	13	25	2	11	2	3	56	5.8
13	18	16	14	4	2	1	55	5.7
14	19	18	16	9	2		64	6.6
15	28	16	9	1	1		55	5.7
16	20	21	8	2			51	5.3
17	28	11	6	0			45	4.7
18	31	18	3	1			53	5.5
19	19	5	3	0			27	2.8
20	16	4	1	1			22	2.3
21	14	2	1				17	1.8
22	5	4					9	0.9
23	4	1					5	0.5
24	3	2					5	0.5
25	5						5	0.5
27	1						1	0.1

Continued ...

Table 12. Concluded.

Age	Number of Children: Oldest Child	Second Oldest Child	Third Oldest Child	Fourth Oldest Child	Fifth Oldest Child	Sixth Oldest Child	Total Number of Children	Percent of Total
29	1						1	0.1
30	1						1	0.1
31	1						1	0.1
33	1						1	0.1
34	1						1	0.1
36	1						1	0.1
44	1						1	0.1
53	1						1	0.1
58	1						1	0.1
Not Specified[a]							4	0.4
TOTAL	417	304	155	56	23	8	967	100.0
Mean[b]	12.49	10.34	10.01	10.20	9.30	9.75	11.20	
Mode[b]	18.00	12.00	14.00	12.00	11.00	11.00	14.00	
Median[b]	13.00	11.00	10.00	12.00	10.00	11.00	11.00	
Standard Deviation[b]	7.74	5.75	4.90	4.44	3.54	3.19	6.56	

[a]Two households indicated 7 children and one household indicated 8 children (Table 11) for which only the ages of the 6 eldest were given; hence the 4 children with ages unspecified.

[b]Calculations are made with the exclusion of the four children for which ages were unspecified.

Table 13. Total number of children over five years of age per household of provincial survey respondents, 1975.

Number of Children Per Household	Number of Respondents	Percent of Total Respondents	Percent of Respondents With Children Over 5 Years of Age[a]	Total Number of Children Over 5 Years of Age
0	371	53.8	n.a.	0
1	86	12.5	27.0	86
2	113	16.4	35.5	226
3	76	11.0	23.9	228
4	23	3.3	7.2	92
5	14	2.0	4.4	70
6	3	0.4	0.9	18
7	3	0.4	0.9	21
TOTAL	689	100.0	100.0	741

Respondents: Mean, 1.08; Mode, 0.00; Median, 0.43; Standard Deviation, 1.43.

Respondents With Children over 5 Years of Age[a]: Mean[a], 2.33; Mode[a], 2.00; Median[a], 2.00; Standard Deviation[a], 1.21.

[a]Calculations are made with the exclusion of the number of respondents who had no children over five years of age (689 - 371 = 318).

Table 14. Number of years of formal education of provincial survey respondents, 1975.

Years of Education	Respondents			Spouses of Respondents			Combined Total	Adjusted Percent of Combined Total[a]	Cumulative Adjusted Percent of Combined Total[a]
	Number	Percent of Total	Adjusted Percent of Total[a]	Number	Percent of Total	Adjusted Percent of Total[a]			
Not Specified	21	3.1	n.a.	5	0.9	n.a.	26	n.a.	n.a.
1	1	0.1	0.1	1	0.2	0.2	2	0.2	0.2
3	0	0.0	0.0	2	0.4	0.4	2	0.2	0.4
4	1	0.1	0.1	1	0.2	0.2	2	0.2	0.6
5	6	0.9	0.9	2	0.4	0.4	8	0.7	1.3
6	10	1.5	1.5	8	1.5	1.5	18	1.5	2.8
7	11	1.6	1.7	12	2.2	2.2	23	1.9	4.7
8	59	8.6	8.8	32	5.8	5.9	91	7.5	12.2
9	42	6.1	6.3	32	5.8	5.9	74	6.1	18.3
10	82	11.9	12.3	62	11.3	11.4	144	11.9	30.2
11	49	7.1	7.3	59	10.7	10.8	108	8.9	39.0
12	183	26.6	27.4	205	37.2	37.6	388	32.0	71.0
13	26	3.8	3.9	25	4.5	4.6	51	4.2	75.2
14	33	4.8	4.9	39	7.1	7.1	72	5.9	81.1
15	20	2.9	3.0	23	4.2	4.2	43	3.5	84.6
16	53	7.7	7.9	29	5.3	5.3	82	6.7	91.3
17	42	6.1	6.3	6	1.1	1.1	48	3.9	95.2
18	23	3.3	3.4	4	0.7	0.7	27	2.2	97.4
19	11	1.6	1.7	2	0.4	0.4	13	1.1	98.5
20	9	1.3	1.4	2	0.4	0.4	11	0.9	99.4
21	4	0.6	0.6	0	0.0	0.0	4	0.3	99.7
22	1	0.1	0.1	0	0.0	0.0	1	0.1	99.8
23	1	0.1	0.1	0	0.0	0.0	1	0.1	99.9
25	1	0.1	0.1	0	0.0	0.0	1	0.1	100.0
TOTAL	689	100.0	100.0	551	100.0	100.0	1,240	100.0	

Continued ...

Table 14. Concluded.

Mean[a]	12.27	11.64	11.99
Mode[a]	12.00	12.00	12.00
Median[a]	12.00	12.00	12.00
Standard Deviation[a]	3.39	2.51	3.04

[a]Calculations are made with the exclusion of those respondents or spouses of respondents who did not indicate their years of formal education.

Table 15. Family income of provincial survey respondents, 1975.

Income Class	Number of Respondents	Percent of Total Response	Adjusted Percent of Response[a]
No Answer	39	5.7	Not Applicable
Less than $ 5,000	52	7.5	8.0
$ 5,001 - $10,000	79	11.5	12.1
$10,001 - $15,000	156	22.6	24.0
$15,001 - $20,000	153	22.2	23.5
$20,001 - $25,000	90	13.1	13.9
$25,001 - $30,000	47	6.8	7.2
$30,001 - $35,000	29	4.2	4.5
$35,001 and over[b]	44	6.4	6.8
TOTAL	689	100.0	100.0

Mean[a,b], $17,677; Mode[a,b], $12,500; Median[a,b], $17,500; Standard Deviation[a,b], $10,111.

[a]The calculations are made with the exclusion of the 39 respondents who did not indicate their family income (689 - 39 = 650).

[b]Calculations are made on the assumption that the 44 responses in the $35,001 and over income class are distributed as follows:

$35,001 - $40,000	19
$40,001 - $45,000	12
$45,001 - $50,000	7
$50,001 - $55,000	4
$55,001 - $60,000	2

Midpoints and corresponding frequencies for each income class were utilized in the calculations. These assumptions are such that the calculations provided are estimates of actual sample measures.

Table 16. Annual number of hours of fish and wildlife enjoyment by provincial survey respondents, 1975.

Annual Number of Hours	Number of Respondents				Percent of Total[a]
	Birds	Animals	Aquatic Life	Combined Total	
Not Specified	48	46	42	42	n.a.
Cannot Determine	10	10	7	7	n.a.
0	231	175	285	131	20.5
1	28	22	24	5	0.8
2	29	24	34	14	2.2
3	7	9	10	12	1.9
4	8	11	11	10	1.6
5	33	58	35	13	2.0
6	5	10	4	10	1.6
7	2	2	1	9	1.4
8	6	5	4	6	0.9
9	2	1	0	2	0.3
10	72	60	43	21	3.3
11	0	0	0	2	0.3
12	8	6	5	7	1.1
13	0	0	0	1	0.2
14	1	0	0	3	0.5
15	7	10	9	17	2.7
16	1	3	0	8	1.2
17	0	1	0	6	0.9
18	0	0	0	7	1.1
20	39	49	30	17	2.7
21	0	0	0	4	0.6
22	0	0	0	5	0.8
23	1	0	0	0	0.0
24	5	3	2	5	0.8
25	12	18	7	10	1.6
26	0	0	1	3	0.5
27	2	1	2	3	0.5
28	0	2	0	2	0.3
29	0	0	0	1	0.2
30	19	21	13	19	3.0
31	0	0	0	1	0.2
32	0	0	0	1	0.2
33	1	1	1	1	0.2
35	1	2	1	12	1.9
36	1	0	1	2	0.3
37	0	0	0	2	0.3
40	12	15	11	14	2.2
41	0	0	0	3	0.5
42	0	0	0	2	0.3
44	0	0	1	2	0.3
45	0	1	1	1	0.2

Continued ...

Table 16. Continued.

Annual Number of Hours	Number of Respondents				Percent of Total[a]
	Birds	Animals	Aquatic Life	Combined Total	
46	0	0	0	1	0.2
48	0	4	4	5	0.8
50	23	29	22	16	2.5
51	0	0	0	2	0.3
52	0	0	0	2	0.3
53	0	0	0	1	0.2
54	0	0	0	2	0.3
55	0	0	0	5	0.8
56	0	0	0	1	0.2
58	0	0	0	2	0.3
60	8	5	7	13	2.0
62	0	0	0	2	0.3
64	0	0	0	3	0.5
65	0	0	0	5	0.8
66	0	0	0	1	0.2
69	0	0	0	1	0.2
70	1	3	5	9	1.4
72	1	0	1	2	0.3
73	0	0	0	1	0.2
75	1	4	4	3	0.5
77	0	0	0	1	0.2
80	3	4	1	8	1.2
81	0	0	0	1	0.2
84	0	0	0	1	0.2
85	0	0	0	2	0.3
87	0	0	0	1	0.2
89	0	1	0	0	0.0
90	0	0	1	3	0.5
92	0	0	0	1	0.2
95	0	1	0	1	0.2
99	0	0	0	1	0.2
100	26	25	27	12	1.9
101	0	0	0	1	0.2
102	0	0	0	2	0.3
106	0	0	0	1	0.2
108	0	0	0	1	0.2
110	0	0	0	2	0.3
115	0	0	0	1	0.2
120	1	2	2	7	1.1
125	1	1	1	3	0.5
127	0	0	0	1	0.2
130	0	2	0	7	1.1
135	0	0	0	2	0.3
136	0	0	0	1	0.2
139	0	1	0	0	0.0

Continued ...

Table 16. Continued.

Annual Number of Hours	Number of Respondents				Percent of Total[a]
	Birds	Animals	Aquatic Life	Combined Total	
140	0	0	0	3	0.5
145	0	0	0	1	0.2
149	0	0	0	1	0.2
150	1	1	9	8	1.2
152	0	0	0	1	0.2
160	1	2	1	5	0.8
168	1	1	1	0	0.0
170	0	0	0	2	0.3
179	1	0	0	0	0.0
180	0	0	1	1	0.2
183	0	1	0	0	0.0
190	0	0	0	3	0.5
200	12	14	7	8	1.2
201	0	0	0	1	0.2
210	0	0	0	3	0.5
220	0	0	0	4	0.6
225	0	0	0	2	0.3
230	0	0	0	1	0.2
235	0	0	0	1	0.2
240	1	0	0	1	0.2
245	0	0	0	1	0.2
250	0	1	1	2	0.3
260	0	0	0	1	0.2
263	0	0	0	1	0.2
290	0	0	0	1	0.2
300	5	5	1	7	1.1
310	0	0	0	1	0.2
320	0	0	0	1	0.2
324	0	0	0	1	0.2
325	0	0	0	2	0.3
329	0	0	0	1	0.2
330	0	1	0	1	0.2
336	1	0	0	1	0.2
350	0	1	0	3	0.5
360	0	0	0	1	0.2
365	1	0	0	0	0.0
375	0	0	0	3	0.5
400	1	3	1	3	0.5
420	0	0	0	1	0.2
450	0	0	0	1	0.2
460	0	0	0	1	0.2
480	0	1	1	2	0.3
500	5	6	4	2	0.3
504	0	0	0	1	0.2
524	1	1	0	0	0.0

Continued ...

Table 16. Concluded.

Annual Number of Hours	Number of Respondents				Percent of Total[a]
	Birds	Animals	Aquatic Life	Combined Total	
548	0	0	0	1	0.2
550	0	0	0	2	0.3
560	0	0	0	1	0.2
600	1	1	1	2	0.3
630	0	0	0	1	0.2
650	0	0	0	1	0.2
700	0	0	1	1	0.2
701	0	1	0	0	0.0
750	1	0	0	0	0.0
770	0	0	0	1	0.2
800	0	0	0	3	0.5
850	0	1	0	0	0.0
900	0	0	0	1	0.2
930	0	0	0	1	0.2
950	0	0	0	1	0.2
1000	0	0	0	1	0.2
1048	0	0	0	1	0.2
1150	0	0	0	1	0.2
1400	0	0	0	1	0.2
1500	0	0	0	3	0.5
TOTAL	689	689	689	689	100.0
Mean[a]	30.11	37.96	25.96	94.03	
Mode[a]	0.00	0.00	0.00	0.00	
Median[a]	5.00	8.50	2.00	25.00	
Standard Deviation[a]	78.30	53.81	61.14	172.00	

[a]Calculations are made with the exclusion of those respondents who did not indicate number of hours of fish and wildlife enjoyment. Mean, mode, median and standard deviation are expressed in terms of hours per person.

Table 17. Annual number of hours of fish and wildlife enjoyment by spouses of provincial survey respondents, 1975.

Annual Number of Hours	Number of Spouses				Percent of Total[a]
	Birds	Animals	Aquatic Life	Combined Total	
Not Specified	41	38	37	37	n.a.
Cannot Determine	10	10	7	7	n.a.
0	186	149	289	110	21.7
1	23	19	25	3	0.6
2	30	23	22	16	3.2
3	4	10	4	14	2.8
4	9	9	5	10	2.0
5	37	45	24	7	1.4
6	5	5	3	15	3.0
7	3	3	0	7	1.4
8	5	8	2	6	1.2
9	0	1	0	2	0.4
10	49	65	37	21	4.1
11	0	0	0	2	0.4
12	3	4	3	5	1.0
13	0	0	0	4	0.8
14	2	0	0	2	0.4
15	8	13	5	18	3.6
16	1	2	0	5	1.0
17	0	1	0	4	0.8
18	0	1	0	4	0.8
19	0	0	0	1	0.2
20	33	35	19	26	5.1
21	1	0	0	6	1.2
22	0	1	0	4	0.8
23	1	1	1	1	0.2
24	3	3	0	6	1.2
25	6	13	3	7	1.4
26	0	0	1	3	0.6
27	1	1	1	2	0.4
29	0	0	0	1	0.2
30	9	13	5	25	4.9
31	0	0	0	2	0.4
32	0	0	0	2	0.4
33	0	0	0	1	0.2
35	0	0	0	6	1.2
36	0	0	1	1	0.2
40	9	5	8	7	1.4
41	1	0	0	1	0.2
42	0	0	0	1	0.2
44	0	0	1	0	0.0
45	0	2	1	6	1.2
46	0	0	0	2	0.4

Continued ...

Table 17. Continued.

Annual Number of Hours	Number of Spouses				Percent of Total[a]
	Birds	Animals	Aquatic Life	Combined Total	
48	0	0	0	1	0.2
50	17	23	15	13	2.6
51	0	0	0	1	0.2
52	0	0	0	1	0.2
55	0	1	0	0	0.0
60	3	4	3	12	2.4
62	0	0	0	1	0.2
64	0	0	0	1	0.2
65	0	0	0	4	0.8
69	0	0	0	1	0.2
70	0	1	1	5	1.0
73	0	0	0	1	0.2
74	0	0	0	1	0.2
75	4	3	0	3	0.6
76	0	0	0	1	0.2
77	0	1	0	0	0.0
80	4	4	3	4	0.8
81	0	0	0	1	0.2
90	1	0	1	3	0.6
95	0	0	0	1	0.2
96	0	0	0	1	0.2
97	0	0	0	1	0.2
100	20	14	13	11	2.2
106	0	0	0	1	0.2
110	0	0	0	1	0.2
117	0	0	0	1	0.2
120	1	1	1	6	1.2
125	0	0	0	1	0.2
130	0	0	0	1	0.2
140	0	0	0	4	0.8
145	0	0	0	1	0.2
150	1	0	2	5	1.0
152	0	0	0	2	0.4
160	1	0	0	2	0.4
168	1	1	1	0	0.0
170	0	0	0	1	0.2
175	0	0	0	2	0.4
183	1	1	0	0	0.0
190	0	0	0	1	0.2
200	6	8	5	7	1.4
205	0	0	0	1	0.2
210	0	0	0	1	0.2
220	0	0	0	2	0.4
225	0	0	0	1	0.2
235	0	0	0	1	0.2

Continued ...

Table 17. Concluded.

Annual Number of Hours	Number of Spouses				Percent of Total[a]
	Birds	Animals	Aquatic Life	Combined Total	
240	0	1	0	3	0.6
250	1	1	0	0	0.0
270	0	0	0	1	0.2
300	1	2	0	4	0.8
336	1	0	0	1	0.2
350	0	0	0	2	0.4
366	0	0	0	1	0.2
377	1	0	0	0	0.0
400	0	1	0	2	0.4
410	0	0	0	1	0.2
430	0	0	0	1	0.2
450	1	0	0	1	0.2
500	2	2	1	0	0.0
504	0	0	0	1	0.2
505	0	0	0	1	0.2
524	1	1	0	0	0.0
577	0	0	1	0	0.0
600	0	1	0	3	0.6
800	0	0	0	2	0.4
900	2	0	0	2	0.4
910	0	0	0	1	0.2
998	1	0	0	0	0.0
1048	0	0	0	1	0.2
1100	0	0	0	1	0.2
1448	0	0	0	1	0.2
1500	0	0	0	1	0.2
TOTAL	551	551	551	551	100.0
Mean[a]	32.19	24.87	14.12	71.18	
Mode[a]	0.00	0.00	0.00	0.00	
Median[a]	4.00	5.00	0.00	18.00	
Standard Deviation[a]	92.89	63.23	44.86	162.10	

[a]Calculations are made with the exclusion of those spouses of respondents who did not indicate number of hours of fish and wildlife enjoyment. Mean, mode, median, and standard deviation are expressed in terms of hours per person.

Table 18. Annual number of hours of fish and wildlife enjoyment by children over five years of age of provincial survey respondents, 1975.

Annual Number of Childrens' Hours per Family[a]	Number of Families				Percent of Total[b]
	Birds	Animals	Aquatic Life	Combined Total	
Not Specified	26	23	24	23	n.a.
Cannot Determine	5	7	4	4	n.a.
0	114	85	136	60	20.6
1	4	3	2	0	0.0
2	5	9	6	3	1.0
3	7	8	2	5	1.7
4	9	7	9	5	1.7
5	11	9	4	3	1.0
6	6	4	5	9	3.1
7	0	0	0	1	0.3
8	3	6	5	5	1.7
9	0	1	0	1	0.3
10	11	16	13	6	2.1
11	0	0	0	1	0.3
12	3	10	2	8	2.7
14	2	2	1	2	0.7
15	6	7	5	5	1.7
16	1	0	0	1	0.3
17	0	0	0	2	0.7
18	4	1	0	3	1.0
20	18	19	10	5	1.7
21	0	0	0	1	0.3
22	0	0	0	3	1.0
23	1	1	1	0	0.0
24	1	4	3	5	1.7
25	2	2	3	0	0.0
28	0	0	0	2	0.7
30	10	11	5	8	2.7
32	1	1	0	1	0.3
34	0	0	0	1	0.3
35	1	1	2	0	0.0
36	0	1	2	1	0.3
40	9	6	11	14	4.8
42	1	1	1	1	0.3
45	2	3	2	2	0.7
48	1	0	1	2	0.7
50	6	6	1	3	1.0
51	0	1	0	1	0.3
54	0	0	1	1	0.3
58	0	0	0	1	0.3

Continued ...

Table 18. Continued.

Annual Number of Childrens' Hours per Family	Number of Families				Percent of Total[b]
	Birds	Animals	Aquatic Life	Combined Total	
60	10	12	15	5	1.7
64	0	0	0	2	0.7
65	0	0	0	1	0.3
66	0	0	0	3	1.0
68	0	0	0	1	0.3
69	0	0	0	1	0.3
70	1	0	1	1	0.3
72	0	0	0	1	0.3
75	1	2	1	3	1.0
80	3	4	2	7	2.4
84	0	0	0	2	0.7
90	3	5	2	5	1.7
91	0	0	0	1	0.3
96	0	0	0	2	0.7
98	0	0	0	1	0.3
100	3	5	11	3	1.0
104	0	0	0	1	0.3
105	0	0	1	2	0.7
108	1	0	0	0	0.0
114	0	0	0	1	0.3
120	2	1	4	4	1.4
125	1	0	0	1	0.3
126	0	0	0	1	0.3
135	0	0	0	1	0.3
138	0	0	0	1	0.3
140	0	0	0	5	1.7
150	1	3	1	1	0.3
156	0	0	0	1	0.3
160	0	0	1	2	0.7
180	0	2	1	5	1.7
200	6	9	4	2	0.7
210	0	1	1	1	0.3
220	0	0	0	1	0.3
225	0	1	0	1	0.3
228	0	0	0	1	0.3
240	1	1	0	3	1.0
248	0	0	0	1	0.3
250	0	2	0	0	0.0
270	1	1	0	0	0.0
300	3	3	4	6	2.1
304	0	0	0	1	0.3
320	1	0	0	1	0.3
330	0	0	0	1	0.3
340	0	0	0	1	0.3

Continued ...

Table 18. Continued.

Annual Number of Childrens' Hours per Family	Number of Families				Percent of Total[b]
	Birds	Animals	Aquatic Life	Combined Total	
360	0	0	0	3	1.0
370	0	0	0	1	0.3
375	0	1	0	0	0.0
390	0	0	0	1	0.3
400	2	1	0	4	1.4
450	0	0	1	1	0.3
500	0	1	0	1	0.3
510	0	0	1	0	0.0
524	1	1	0	0	0.0
525	0	0	0	1	0.3
540	0	0	0	1	0.3
564	0	0	0	1	0.3
600	0	2	1	1	0.3
630	0	0	0	2	0.7
750	0	0	0	1	0.3
800	0	1	2	1	0.3
900	1	0	1	3	1.0
940	0	0	0	1	0.3
1048	0	0	0	1	0.3
1200	3	0	0	1	0.3
1500	2	1	1	2	0.7
1950	0	1	0	0	0.0
2000	1	1	0	0	0.0
2085	0	0	0	1	0.3
2178	0	0	0	1	0.3
2200	0	0	0	1	0.3
2400	0	0	1	1	0.3
3000	0	1	0	1	0.3
4500	0	0	0	1	0.3
6400	0	0	0	1	0.3
Total Number of Families[a]	318	318	318	318	100.0
Mean[b]	63.18	75.85	53.46	192.49	
Mode[b]	0.00	0.00	0.00	0.00	
Median[b]	5.00	10.00	3.00	33.00	
Standard Deviation[b]	221.53	267.90	195.31	577.37	
Total Number of Children[a]	741	741	741	741	n.a.
Mean[c]	27.11	32.55	22.95	82.61	

Continued ...

Table 18. Concluded.

[a]There were 318 respondents with children over 5 years of age. The average number of such children was 2.33 per family for a total of 741 (Table 13).

[b]Calculations are made with the exclusion of those families of respondents for which the number of hours of fish and wildlife enjoyment were not provided. Mean, mode, median, and standard deviation are expressed in terms of hours per family.

[c]The mean is expressed in terms of hours per child.

Table 19. Annual number of hours of fish and wildlife enjoyment by families of provincial survey respondents, 1975.

Annual Number of Hours per Family	Number of Families				Percent of Total[a]
	Birds	Animals	Aquatic Life	Combined Total	
Not Specified	48	46	42	42	n.a.
Cannot Determine	10	10	7	7	n.a.
0	212	161	265	116	18.1
1	6	4	8	1	0.2
2	20	12	19	4	0.6
3	8	6	11	2	0.3
4	11	14	13	8	1.3
5	11	15	13	4	0.6
6	6	7	10	3	0.5
7	3	0	1	4	0.6
8	11	11	10	8	1.3
9	2	1	2	3	0.5
10	31	33	30	8	1.3
11	2	1	2	2	0.3
12	4	7	7	13	2.0
13	0	4	0	1	0.2
14	4	2	4	5	0.8
15	11	5	11	6	0.9
16	4	3	0	5	0.8
17	0	1	0	2	0.3
18	4	5	3	5	0.8
19	1	0	0	1	0.2
20	27	38	29	11	1.7
21	1	3	0	3	0.5
22	3	1	0	3	0.5
23	1	1	0	2	0.3
24	5	5	4	5	0.8
25	12	16	5	4	0.6
26	2	0	0	2	0.3
27	0	0	1	3	0.5
28	3	2	0	3	0.5
29	0	1	0	0	0.0
30	14	23	12	9	1.4
31	0	0	0	1	0.2
32	3	3	1	2	0.3
33	0	0	0	1	0.2
34	2	2	0	3	0.5
35	7	7	6	7	1.1
36	2	2	0	3	0.5
37	0	0	0	2	0.3
38	0	0	0	1	0.2
39	1	1	0	1	0.2
40	18	26	10	10	1.6

Continued ...

Table 19. Continued.

Annual Number of Hours per Family	Number of Families				Percent of Total[a]
	Birds	Animals	Aquatic Life	Combined Total	
41	0	1	0	0	0.0
42	1	1	2	4	0.6
43	1	0	0	0	0.0
44	1	1	0	0	0.0
45	2	5	3	3	0.5
46	1	2	1	1	0.2
47	1	1	1	1	0.2
48	3	5	2	2	0.3
50	10	19	15	10	1.6
51	0	0	0	2	0.3
52	0	1	2	1	0.2
53	0	0	1	2	0.3
54	0	0	0	2	0.3
55	3	4	1	4	0.6
56	0	3	0	3	0.5
58	0	1	0	3	0.5
59	0	0	0	3	0.5
60	15	14	9	11	1.7
61	0	0	0	2	0.3
62	1	0	0	5	0.8
63	0	1	0	0	0.0
64	1	0	0	2	0.3
65	2	1	0	2	0.3
67	0	0	0	2	0.3
68	0	0	0	3	0.5
69	0	0	0	1	0.2
70	10	5	8	7	1.1
71	0	0	0	2	0.3
72	0	0	0	1	0.2
75	4	6	2	0	0.0
76	0	0	0	1	0.2
77	0	0	0	1	0.2
78	0	1	1	1	0.2
79	1	1	1	0	0.0
80	9	9	6	6	0.9
82	0	0	0	2	0.3
83	0	1	0	1	0.2
84	1	0	1	1	0.2
85	0	2	2	5	0.8
88	0	0	1	0	0.0
89	1	1	0	0	0.0
90	2	1	4	5	0.8
91	0	0	0	1	0.2
92	1	0	0	1	0.2
93	0	1	0	0	0.0

Continued ...

Table 19. Continued.

Annual Number of Hours per Family	Number of Families				Percent of Total[a]
	Birds	Animals	Aquatic Life	Combined Total	
95	1	1	0	2	0.3
96	0	0	1	2	0.3
98	0	1	0	0	0.0
99	1	1	1	0	0.0
100	17	18	14	9	1.4
102	0	0	1	3	0.5
104	0	0	1	0	0.0
105	0	0	1	3	0.5
106	0	0	0	1	0.2
109	0	0	0	2	0.3
110	3	2	2	3	0.5
112	0	0	0	1	0.2
115	1	1	0	4	0.6
120	1	4	4	7	1.1
121	0	0	0	1	0.2
124	1	0	0	2	0.3
125	2	3	1	6	0.9
126	0	0	0	2	0.3
128	0	0	0	1	0.2
130	0	1	1	7	1.1
132	0	0	0	3	0.5
135	0	0	1	1	0.2
136	0	0	0	1	0.2
137	0	0	0	1	0.2
140	0	2	3	5	0.8
141	0	0	0	1	0.2
142	0	1	0	0	0.0
144	0	0	1	1	0.2
145	1	0	0	0	0.0
146	0	0	0	3	0.5
150	9	1	4	8	1.3
152	1	0	0	1	0.2
155	0	1	0	1	0.2
157	0	0	0	1	0.2
158	0	0	0	1	0.2
160	0	3	4	3	0.5
168	1	0	0	1	0.2
169	0	0	0	1	0.2
170	0	1	1	2	0.3
174	0	0	1	0	0.0
175	1	2	0	2	0.3
179	1	0	0	0	0.0
180	1	0	3	4	0.6
181	0	0	0	1	0.2
185	1	1	1	0	0.0
190	0	1	0	4	0.6

Continued ...

Table 19. Continued.

Annual Number of Hours per Family	Number of Families				Percent of Total[a]
	Birds	Animals	Aquatic Life	Combined Total	
194	0	0	0	1	0.2
196	0	0	0	1	0.2
198	0	1	0	0	0.0
200	13	12	10	8	1.3
205	1	0	0	1	0.2
210	1	0	2	1	0.2
212	0	0	0	1	0.2
214	0	0	0	1	0.2
215	2	3	1	0	0.0
216	0	1	0	0	0.0
219	0	0	0	1	0.2
220	1	2	0	5	0.8
225	0	0	1	0	0.0
229	0	0	0	1	0.2
230	2	0	0	2	0.3
234	0	0	0	1	0.2
235	0	0	0	1	0.2
237	0	0	0	1	0.2
238	0	0	0	1	0.2
240	3	2	0	4	0.6
245	0	0	0	2	0.3
249	0	0	0	1	0.2
250	1	2	3	0	0.0
255	0	0	0	2	0.3
260	2	2	1	2	0.3
268	0	0	0	1	0.2
270	1	3	0	2	0.3
273	0	0	0	1	0.2
275	0	0	0	1	0.2
277	0	0	0	1	0.2
280	0	1	1	0	0.0
285	0	0	0	2	0.3
290	0	0	2	2	0.3
293	0	0	0	1	0.2
295	0	0	1	0	0.0
300	6	7	4	8	1.3
310	0	0	0	1	0.2
320	1	0	1	0	0.0
324	0	0	0	1	0.2
325	1	0	0	1	0.2
330	0	0	1	0	0.0
336	1	1	1	0	0.0
340	0	1	1	1	0.2
350	0	3	1	0	0.0
352	0	0	0	1	0.2

Continued ...

Table 19. Continued.

Annual Number of Hours per Family	Number of Families				Percent of Total[a]
	Birds	Animals	Aquatic Life	Combined Total	
353	0	0	0	1	0.2
360	2	2	0	3	0.5
365	0	0	0	1	0.2
366	0	1	0	0	0.0
370	0	0	0	1	0.2
375	0	1	0	1	0.2
390	0	0	0	1	0.2
400	3	8	5	4	0.6
402	0	0	0	1	0.2
420	0		0	2	0.3
425	0		0	1	0.2
430	0	0	1	1	0.2
440	0	0	0	1	0.2
450	2	0	1	1	0.2
460	0	1	0	0	0.0
465	0	0	0	1	0.2
480	0	0	1	1	0.2
482	0	0	0	1	0.2
500	5	5	5	2	0.3
505	0	0	0	1	0.2
510	0	0	0	1	0.2
520	0	0	0	2	0.3
525	1	1	0	0	0.0
530	0	1	0	0	0.0
537	0	0	0	1	0.2
540	0	0	0	1	0.2
548	1	0	0	0	0.0
550	0	0	1	1	0.2
562	0	0	0	1	0.2
564	0	0	0	1	0.2
575	0	0	1	0	0.0
577	0	0	0	1	0.2
580	0	0	0	1	0.2
590	0	0	1	0	0.0
595	0	0	0	1	0.2
600	1	2	1	4	0.6
608	0	0	0	1	0.2
620	1	0	0	0	0.0
640	0	0	0	1	0.2
645	0	0	0	1	0.2
655	0	0	0	1	0.2
672	1	0	0	1	0.2
690	0	0	0	1	0.2
700	1	1	1	0	0.0
710	0	0	0	1	0.2

Continued ...

Table 19. Continued.

Annual Number of Hours per Family	Number of Families				Percent of Total[a]
	Birds	Animals	Aquatic Life	Combined Total	
720	0	1	0	0	0.0
734	0	0	0	1	0.2
750	0	1	0	0	0.0
760	0	0	0	1	0.2
765	0	0	0	1	0.2
775	0	1	0	0	0.0
780	0	0	0	1	0.2
782	0	0	0	1	0.2
800	1	0	0	2	0.3
820	0	0	0	1	0.2
840	0	0	0	1	0.2
850	0	0	0	1	0.2
880	0	0	0	1	0.2
900	0	0	1	1	0.2
914	0	0	0	1	0.2
950	1	0	0	0	0.0
990	0	0	0	1	0.2
1000	1	2	0	2	0.3
1001	0	0	0	1	0.2
1008	0	0	0	1	0.2
1030	0	0	0	1	0.2
1050	0	1	0	1	0.2
1060	0	0	0	1	0.2
1065	0	0	0	2	0.3
1180	0	0	0	1	0.2
1200	0	1	1	2	0.3
1240	1	0	0	0	0.0
1270	0	0	0	1	0.2
1400	1	0	1	2	0.3
1500	0	0	0	3	0.5
1560	1	0	0	0	0.0
1572	1	1	0	0	0.0
1580	0	0	0	1	0.2
1590	0	0	0	1	0.2
1600	0	1	0	1	0.2
1708	1	0	0	0	0.0
1800	0	0	0	2	0.3
1900	0	0	0	1	0.2
2200	0	0	0	1	0.2
2205	0	0	0	1	0.2
2400	1	0	0	0	0.0
2480	0	0	0	1	0.2
2500	1	1	1	0	0.0
2550	0	1	0	0	0.0
2878	0	0	0	1	0.2

Continued ...

Table 19. Concluded.

Annual Number of Hours per Family	Number of Families				Percent of Total[a]
	Birds	Animals	Aquatic Life	Combined Total	
3000	1	1	1	0	0.0
3144	0	0	0	1	0.2
3350	0	1	0	1	0.2
3500	0	0	0	1	0.2
3608	0	0	0	1	0.2
7500	0	0	0	1	0.2
9000	0	0	0	1	0.2
Total Families	689	689	689	689	100.0
Mean[a]	78.64	90.99	60.12	229.75	
Mode[a]	0.00	0.00	0.00	0.00	
Median[a]	10.00	9.00	5.00	60.00	
Standard Deviation[a]	248.57	275.47	197.21	621.82	
Total Persons[b]	1981	1981	1981	1981	
Mean[b]	27.31	31.59	20.88	79.77	

[a]Calculations are made with the exclusion of those families (i.e., households) for which annual hours of fish and wildlife enjoyment were not provided. Mean, mode, median and standard deviation are expressed in terms of annual hours per family.

[b]There were 689 respondents, 551 spouses, and 741 children over five years of age, bringing the total to 1981 persons. This total excludes the number of children represented who are 5 years of age or younger. The mean is expressed in terms of annual hours per person.

Table 20. Proportion of annual total hours of fish and wildlife enjoyment per family of provincial survey respondents by location in Alberta, 1975[a].

Percent of Total Hours per Family	Number of Families				
	Area 1	Area 2	Area 3	Area 4	Area 5
Not Specified	23	23	23	23	23
0	646	395	282	337	500
5	0	0	0	0	1
10	10	37	59	62	53
15	0	0	0	2	1
20	2	21	65	52	27
25	0	2	2	3	3
30	3	28	44	30	20
35	0	1	0	0	0
40	0	17	34	25	12
50	0	29	44	38	11
60	0	20	19	17	3
70	0	14	26	21	10
75	0	1	0	1	0
80	1	18	22	22	2
90	1	21	16	17	5
100	3	62	53	38	18
TOTAL	689	689	689	689	689

[a]Area locations are given in Figure 2.

Table 21. Annual total hours of fish and wildlife enjoyment of provincial survey respondents' families by location in Alberta, 1975[a].

Location	Total Hours	Percent of Total Hours
Area 1	776	0.5
Area 2	41,391	26.2
Area 3	48,799	30.8
Area 4	42,008	26.5
Area 5	25,324	16.0
TOTAL	158,298[b]	100.0

Mean, 31,660; Standard Deviation, 17,260.

[a]Area locations are given in Figure 2.

[b]Total hours of 158,298 are allocated among 689 families for an average 229.75 hours per family of wildlife enjoyment (Table 19). Children five years of age or younger are excluded.

Table 22. Other outdoor recreation activities associated with fish and wildlife enjoyment of families of provincial survey respondents, 1975.

Associated Recreational Activity	Number of Families	Percent of Total Listings	Percent of Total Number of Families
Driving for Pleasure	459	15.91	66.62
Picnicking	453	15.70	65.75
Camping	435	15.08	63.13
Fishing	371	12.86	53.85
Hiking	297	10.29	43.11
Boating	263	9.12	38.17
Hunting	194	6.72	28.16
Skiing	171	5.93	24.82
Snowmobiling	113	3.92	16.40
Horseback Riding	10	0.35	1.45
Snowshoeing	10	0.35	1.45
Motorbike Piding	8	0.28	1.16
Swimming	8	0.28	1.16
Bicycling	7	0.24	1.02
Cross Country Skiing	7	0.24	1.02
Photographing	7	0.24	1.02
Canoeing	6	0.21	0.87
Golf	6	0.21	0.87
Bird Watching	5	0.17	0.73
While at Work	5	0.17	0.73
Berry Picking	4	0.14	0.58
Gardening	4	0.14	0.58
Going to Lake (Cottage)	4	0.14	0.58
Mountain Climbing	3	0.10	0.44
Rock Hunting	3	0.10	0.44
Sketching and Painting	3	0.10	0.44
Admiring Scenery	2	0.07	0.29
Farming	2	0.07	0.29
Flying	2	0.07	0.29
Football	2	0.07	0.29
On Nature Walks	2	0.07	0.29
Scuba Diving	2	0.07	0.29
Animal Tracking	1	0.03	0.15
Dog Training	1	0.03	0.15
Exploring	1	0.03	0.15
Gold Panning	1	0.03	0.15
Hang Gliding	1	0.03	0.15
Ice Fishing	1	0.03	0.15
No Other Activities in Combination with Wildlife Enjoyment	1	0.03	0.15
Nude Bathing	1	0.03	0.15
Planting Taxonomy	1	0.03	0.15
Sculling	1	0.03	0.15

Continued ...

Table 22. Concluded.

Associated Recreational Activity	Number of Families	Percent of Total Listings	Percent of Total Number of Families
Skating	1	0.03	0.15
Stacking Hay	1	0.03	0.15
Tennis	1	0.03	0.15
Tobboganing	1	0.03	0.15
Travelling (necessary)	1	0.03	0.15
Visits to Zoos and Game Farm	1	0.03	0.15
Water Skiing	1	0.03	0.15
Total Listings[b]	2,885		
Total Families[a]	689		
Total Percent		100.00	100.00

[a]Questionnaire recipients were asked to indicate other types of outdoor recreational activities they and their families combined with nonconsumptive fish and wildlife enjoyment.

[b]The 49 activities represented here were listed a total of 2,885 times. On average, a respondent listed 4.2 such activities.

Table 23. Hunting participation during the 1975 hunting season by family members of provincial survey respondents, 1975.

Category	Number of Families	Percent of Total	Adjusted Percent of Total[a]
No Answer	106	15.4	n.a.
At Least One Family Member Hunted during the 1975 Hunting Season	195	23.3	33.4
No Family Member Hunted During the 1975 Season	388	56.3	66.6
TOTAL	689	100.0	100.0

[a]Calculations are made with the exclusion of the number of families for which no indication of hunting participation was provided (689 - 106 = 583).

Table 24. Fishing participation during the 1975-76 fishing season by family members of provincial survey respondents, 1975.

Category	Number of Families	Percent of Total	Adjusted Percent of Total[a]
No Answer	38	5.5	n.a.
At Least One Family Member Fished During the 1975-76 Fishing Season	374	54.3	57.5
No Family Member Fished During the 1975-76 Season	277	40.2	42.5
TOTAL	689	100.0	100.0

[a]Calculations are made with the exclusion of the number of families for which no indication of fishing participation was provided (689 - 38 = 651).

Table 25. Preferences for animal species of provincial survey respondents, 1975.

Species	Number of Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
No Answer	109	142	160	206	234	279	318	350	385	410	2593	0	0.00
Deer, Unspecified	129	98	83	43	24	15	13	6	3	2	416	3434	12.95
Moose	73	97	69	47	37	32	19	7	8	6	395	2985	11.25
Elk	48	56	55	30	20	16	14	12	4	1	256	1935	7.30
Trout, Unspecified	75	28	29	20	33	22	22	18	10	14	271	1858	7.11
Bear, Unspecified	32	24	25	38	28	25	10	9	12	13	216	1399	5.27
Bighorn Sheep	18	17	25	16	17	17	14	15	9	4	152	955	3.60
Owl, Unspecified	5	4	20	19	20	21	15	14	14	14	146	748	2.82
Duck, Unspecified	8	14	11	15	15	10	16	17	15	13	134	697	2.63
Goose, Unspecified	11	9	6	20	21	8	13	11	12	13	124	667	2.51
Pheasant	9	14	11	10	11	14	6	9	16	7	107	600	2.26
Mountain Goat	4	12	12	16	11	11	8	9	8	3	94	555	2.09
Pronghorn Antelope	10	11	11	12	10	7	6	11	8	7	93	546	2.06
Yellow Walleye	13	9	12	10	11	6	6	10	4	3	84	538	2.03
Hawk, Unspecified	6	9	8	4	20	11	16	8	16	9	107	537	2.02
Squirrel, Unspecified	1	7	7	8	9	10	14	11	7	5	79	397	1.50
Beaver	3	7	9	5	7	11	8	9	11	8	78	386	1.46
Coyote	2	4	7	7	9	13	8	12	7	7	76	369	1.39
Eagle, Unspecified	5	3	5	7	11	10	4	12	12	4	73	362	1.36
Bison	2	5	10	13	3	3	6	8	9	5	64	340	1.28
Bird, Unspecified	5	5	7	9	5	9	6	4	3	4	57	335	1.26
Yellow Perch	3	5	9	6	5	6	13	6	4	4	61	331	1.25
Great Northern Pike	1	8	3	7	5	14	4	2	6	4	54	303	1.14
Rainbow Trout	11	6	1	6	5	3	3	3	2	4	44	288	1.09
Robin	8	2	3	6	8	5	6	3	4	7	52	285	1.07
Fox, Unspecified	0	4	3	12	6	5	6	7	3	2	48	258	0.97
White-tailed Deer	3	4	7	5	9	3	3	0	0	2	36	240	0.90

Continued ...

Table 25. Continued.

Species	Number of Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
Wolf	2	1	2	7	6	9	3	7	4	0	41	216	0.81
Whitefish, Unspecified	2	6	6	2	4	2	3	6	2	4	37	208	0.78
Grouse, Unspecified	1	4	4	2	4	6	5	1	5	10	42	189	0.71
Rabbit, Unspecified	1	0	3	3	5	6	7	7	9	5	46	187	0.71
Partridge	0	1	5	5	5	3	2	6	3	8	38	169	0.64
Arctic Grayling	0	5	2	4	4	5	4	1	3	4	32	167	0.63
Everything	16	0	0	1	0	0	0	0	0	0	17	167	0.63
Fish, Unspecified	7	0	4	3	2	2	1	3	2	3	27	165	0.62
Bluebird, Unspecified	6	4	0	0	3	1	6	1	2	0	23	150	0.57
Canada Goose	3	2	2	3	4	1	3	4	1	1	24	141	0.53
Cougar	3	0	3	5	2	0	5	4	3	0	25	139	0.52
Chipmunk	0	1	2	3	2	5	7	5	4	2	31	136	0.51
Black Bear	0	3	1	2	6	5	4	1	3	1	26	136	0.51
Mule Deer	3	2	2	1	2	2	4	2	1	1	20	118	0.44
Sharptailed Grouse	2	0	2	0	6	1	5	0	2	2	20	103	0.39
Lynx	0	3	3	1	1	2	2	1	3	5	21	96	0.36
Grizzly Bear	3	3	2	2	0	1	0	1	0	0	12	95	0.36
Humming Bird, Unspecified	3	1	2	1	0	4	1	1	0	4	17	93	0.35
Wildlife, Unspecified	6	1	0	0	1	0	0	0	1	1	10	78	0.29
Song Bird, Unspecified	1	2	0	1	5	0	1	1	1	1	13	75	0.28
Blue Jay	0	0	2	2	3	0	2	1	4	0	14	67	0.25
Great blue Heron	0	0	1	3	2	2	1	1	3	1	14	65	0.25
Brown Trout	3	1	1	1	0	0	1	1	1	0	9	63	0.24
Swan, Unspecified	0	2	3	1	1	0	1	0	0	3	11	62	0.23
Loon, Unspecified	3	0	0	1	1	1	2	1	0	1	10	60	0.23
Meadowlark, Unspecified	1	2	0	0	2	3	0	0	1	1	10	58	0.22
Porcupine	0	0	3	1	1	1	1	3	1	1	12	58	0.22

Continued ...

Table 25. Continued.

Species	Number of Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
Migratory Bird, Unspecified	2	1	1	1	0	0	2	1	0	2	10	57	0.21
Caribou	2	0	0	2	1	1	1	0	2	1	10	54	0.20
Animals, Unspecified	1	3	2	0	0	0	0	0	0	0	6	53	0.20
Oriole, Unspecified	1	0	0	0	1	3	1	5	0	1	12	51	0.19
Small Bird	3	0	0	2	0	0	0	0	1	1	7	47	0.18
"Gopher"	0	0	0	2	1	1	1	4	2	1	12	46	0.17
Lake Trout	2	0	1	0	1	0	2	0	2	0	8	46	0.17
Raptor, Unspecified	2	1	1	0	0	1	1	0	0	0	6	46	0.17
Mallard Duck	1	2	0	1	0	0	1	0	2	0	7	43	0.16
"Birds of Prey"	0	0	1	1	2	2	0	0	0	4	10	41	0.15
Brook Trout	0	0	2	1	2	0	1	0	1	0	7	41	0.15
Swallow, Unspecified	0	1	3	0	0	0	1	1	0	0	6	40	0.15
Upland Bird, Unspecified	0	0	1	1	1	1	2	1	1	1	9	40	0.15
Crane, Unspecified	1	0	1	0	1	1	1	1	1	1	8	39	0.15
Otter	0	1	0	0	1	2	2	1	1	0	8	38	0.14
Falcon, Unspecified	3	0	0	0	0	0	1	1	0	0	5	37	0.14
Osprey	0	3	0	1	0	0	0	0	0	0	4	34	0.13
Big Game, Unspecified	1	1	0	2	0	0	0	0	0	0	4	33	0.12
Chickadee, Unspecified	1	1	0	0	1	1	0	1	0	0	5	33	0.12
Hoary Marmot	1	0	1	1	0	0	1	0	0	1	5	30	0.11
Cutthroat Trout	0	2	1	0	0	0	0	1	0	0	4	29	0.11
Bobcat	0	0	0	0	2	1	1	0	2	3	9	28	0.11
Goldeye	0	1	1	0	1	1	0	0	0	0	4	28	0.11
Ruffed Grouse	0	0	1	2	0	0	0	1	1	0	5	27	0.10
Wild Horse	0	0	1	1	1	0	0	2	0	1	6	27	0.10
Mink	0	0	1	0	0	2	0	1	1	2	7	25	0.09
"Wildcat", Unspecified	0	0	0	1	1	1	0	1	2	0	6	25	0.09
Badger	0	0	0	1	0	1	0	2	1	2	7	22	0.08

Continued ...

Table 25. Continued.

Species	Number of Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
Baltimore Oriole	1	1	0	0	0	0	0	1	0	0	3	22	0.08
Cedar Waxwing	0	0	2	0	0	0	0	1	1	1	5	22	0.08
Muskrat	0	1	0	0	0	0	2	1	1	0	5	22	0.08
Purple Martin	1	1	0	0	0	0	0	0	0	0	2	19	0.07
Sturgeon	0	1	0	1	0	0	0	1	0	0	3	19	0.07
Wolverine	0	1	0	1	0	0	0	0	1	1	4	19	0.07
Skunk	0	0	0	1	0	1	0	0	1	4	7	18	0.07
Grosbeak, Unspecified	0	1	1	0	0	0	0	0	0	0	2	17	0.06
Ptarmigan, Unspecified	0	1	0	0	0	0	1	1	0	1	4	17	0.06
Dolly Varden	0	0	1	1	0	0	0	0	0	1	3	16	0.06
Golden Eagle	0	1	0	1	0	0	0	0	0	0	2	16	0.06
Snow Goose	0	0	1	0	0	1	0	1	0	0	3	16	0.06
Wren, Unspecified	1	0	0	0	1	0	0	0	0	0	2	16	0.06
Groundsquirrel, Unspecified	0	0	0	0	0	0	2	2	0	1	5	15	0.06
Marten	0	0	0	0	1	1	1	0	0	0	3	15	0.06
Red-Winged Blackbird	0	0	0	1	1	0	0	0	0	2	4	15	0.06
Trumpeter Swan	1	0	0	0	0	1	0	0	0	0	2	15	0.06
Canada Jay	0	0	0	1	0	1	0	0	0	2	4	14	0.05
Long-eared Owl	1	0	0	0	0	0	1	0	0	0	2	14	0.05
Woodpecker, Unspecified	0	0	0	0	1	0	1	1	0	1	4	14	0.05
Artiodactyla, Unspecified	0	1	0	0	0	0	1	0	0	0	2	13	0.05
Blackbird, Unspecified	0	0	0	0	0	2	0	1	0	0	3	13	0.05
Finch, Unspecified	0	1	0	0	0	0	1	0	0	0	2	13	0.05
Turdidae	0	1	0	0	0	0	0	1	0	1	3	13	0.05
Bald Eagle	0	0	0	1	0	1	0	0	0	0	2	12	0.05
Bire Game, Unspecified	0	0	0	1	0	1	0	0	0	0	2	12	0.05
Carnivora, Unspecified	0	0	0	1	0	1	0	0	0	0	2	12	0.05

Continued ...

Table 25. Continued.

Species	Number of Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
Magpie	0	1	0	0	0	0	0	1	0	0	2	12	0.05
Sage Grouse	0	1	0	0	0	0	0	1	0	0	2	12	0.05
Snowy Owl	0	1	0	0	0	0	0	0	1	1	3	12	0.05
Woodchuck	0	0	0	0	2	0	0	0	0	0	2	12	0.05
Woodwarbler, Unspecified	0	0	0	0	0	1	1	0	1	0	3	11	0.04
Furbearers, Unspecified	1	0	0	0	0	0	0	0	0	0	1	10	0.04
Horned Lizard	0	1	0	0	0	0	0	0	0	1	2	10	0.04
Large Mammals	1	0	0	0	0	0	0	0	0	0	1	10	0.04
Sparrow, Unspecified	0	0	0	0	0	0	1	2	0	0	3	10	0.04
Spruce Grouse	0	0	0	0	0	0	1	1	1	1	4	10	0.04
Anything	0	1	0	0	0	0	0	0	0	0	1	9	0.03
Crow	0	0	0	1	0	0	0	0	0	2	3	9	0.03
Double Crested Cormorant	0	1	0	0	0	0	0	0	0	0	1	9	0.03
Small Mammals	0	1	0	0	0	0	0	0	0	0	1	9	0.03
Snipe	0	1	0	0	0	0	0	0	0	0	1	9	0.03
Whooping Crane	0	0	0	0	0	1	1	0	0	0	2	9	0.03
Small Animals	0	0	0	0	1	0	0	0	1	0	2	8	0.03
White Pelican	0	0	0	0	0	0	1	1	0	1	3	8	0.03
Wild Turkey	0	0	1	0	0	0	0	0	0	0	1	8	0.03
Junco, Unspecified	0	0	0	1	0	0	0	0	0	0	1	7	0.03
Mammals, Unspecified	0	0	0	1	0	0	0	0	0	0	1	7	0.03
Rattlesnake, Unspecified	0	0	0	1	0	0	0	0	0	0	1	7	0.03
Red Fox	0	0	0	0	0	1	0	0	1	0	2	7	0.03
Redpoll Unspecified	0	0	0	0	1	0	0	0	0	0	1	6	0.02
Sandhill Crane	0	0	0	0	1	0	0	0	0	0	1	6	0.02
Whistling Swan	0	0	0	0	1	0	0	0	0	0	1	6	0.02
Deer Mouse	0	0	0	0	0	1	0	0	0	0	1	5	0.02

Continued ...

Table 25. Continued.

Species	Number of Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
Fisher	0	0	0	0	0	1	0	0	0	0	1	5	0.02
Flying Squirrel	0	0	0	0	0	1	0	0	0	0	1	5	0.02
Gull, Unspecified	0	0	0	0	0	0	0	0	2	1	3	5	0.02
Marmot, Unspecified	0	0	0	0	0	0	1	0	0	1	2	5	0.02
Sandpiper	0	0	0	0	0	1	0	0	0	0	1	5	0.02
Wood Duck	0	0	0	0	0	1	0	0	0	0	1	5	0.02
Fringillidae	0	0	0	0	0	0	1	0	0	0	1	4	0.02
Grebe, Unspecified	0	0	0	0	0	0	1	0	0	0	1	4	0.02
Goldfinch, Unspecified	0	0	0	0	0	0	0	1	0	0	1	3	0.01
Icteridae	0	0	0	0	0	0	0	0	1	1	2	3	0.01
Jumping Mouse	0	0	0	0	0	0	0	1	0	0	1	3	0.01
Raven	0	0	0	0	0	0	0	1	0	0	1	3	0.01
Garter Snake	0	0	0	0	0	0	0	0	0	2	2	2	0.01
Minnow, Unspecified	0	0	0	0	0	0	0	0	1	0	1	2	0.01
Amphibian, Unspecified	0	0	0	0	0	0	0	0	0	1	1	1	0.00
Bat	0	0	0	0	0	0	0	0	0	1	1	1	0.00
Rodent, Unspecified	0	0	0	0	0	0	0	0	0	1	1	1	0.00
Non-Alberta Species	0	3	1	3	3	4	3	3	5	5	30	130	0.49
TOTAL	689	689	689	689	689	689	689	689	689	689	6,890	26,523	100.00
Summary:													
No Answer	109	142	160	206	234	279	318	350	385	410	2,593	0	0.00

Continued ...

Table 25. Continued.

Species		Number of Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
Birds:	Goose	14	11	9	23	25	10	16	16	13	14	151	824	3.11
	Owl	6	4	20	19	20	21	16	14	14	14	148	762	2.87
	Duck	9	16	11	16	15	11	17	17	17	13	142	745	2.81
	Pheasant	9	14	11	10	11	14	6	9	16	7	107	600	2.26
	Hawk	6	9	8	4	20	11	16	8	16	9	107	537	2.02
	Eagle	5	3	5	8	11	11	4	12	12	4	75	374	1.41
	Grouse	3	5	7	4	10	7	11	4	9	13	73	341	1.29
	Bird, Unspecified	5	5	7	9	5	9	6	4	3	4	57	335	1.26
	Robin	8	2	3	6	8	5	6	3	4	7	52	285	1.07
	Other	32	32	25	26	27	31	35	35	23	43	309	1,550	6.22
	SUBTOTAL	97	101	106	125	152	130	133	122	127	128	1,221	6,353	24.32
Animals:	Deer	135	104	92	49	35	20	20	8	4	5	472	3,792	14.30
	Moose	73	97	69	47	37	32	19	7	8	6	395	2,985	11.25
	Elk	47	56	55	30	20	16	14	12	4	1	256	1,935	7.30
	Bear	32	27	26	41	34	31	14	12	16	16	249	1,557	5.87
	Bighorn Sheep	18	17	25	16	17	17	14	15	9	4	152	955	3.60
	Mountain Goat	4	12	12	16	11	11	8	9	8	3	94	555	2.09
	Pronghorn Antelope	10	11	11	12	10	7	6	11	8	7	93	546	2.06
	Squirrels	1	7	7	8	9	11	14	11	7	5	80	402	1.52
	Beaver	3	7	9	5	7	11	8	9	11	8	78	486	1.46
	Coyote	2	4	7	7	9	13	8	12	7	7	76	369	1.39
	Bixon	2	5	10	13	3	3	6	8	9	5	64	340	1.28
	Fox	0	4	3	12	6	6	6	7	4	2	50	265	1.00
	Other	38	20	23	37	29	37	38	41	39	35	332	1,750	6.60
	SUBTOTAL	366	371	349	293	227	215	175	162	134	104	2,396	15,937	59.72

Continued ...

Table 25. Concluded.

Species		Number of Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
Aquatic Life:	Trout	91	37	35	28	41	25	29	23	16	18	343	2,325	8.77
	Walleye	13	9	12	10	11	6	6	10	4	3	84	538	2.03
	Yellow Perch	3	5	9	6	5	6	13	6	4	4	61	331	1.25
	Great N. Pikel	8	3	7	5	14	4	2	6	4		54	303	1.14
	Other	9	13	14	11	11	10	8	11	8	13	108	606	2.28
	SUBTOTAL	117	72	73	62	73	61	60	52	38	42	650	4,103	15.47
Non-Alberta Species		0	3	1	3	3	4	3	3	5	5	30	130	0.49
TOTAL		689	689	689	689	689	689	689	689	689	689	6,890	26,523	100.00

[a]Among the 689 respondents, 580 provided the name of at least one species they would like to see.

[b]The scores are weighted sums of the rankings in which "1st" is weighted 10, "2nd" weighted 9, and so on to "10th" which is weighted 1. Each of the 580 respondents listed, on average, 7.4 species.

Table 26. Preferences for increased animal species populations by provincial survey respondents, 1975.

Species	Number of Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
No Answer	210	268	309	364	412	452	485	509	526	545	4080	0	0.00
Pronghorn Antelope	51	24	34	27	10	9	12	11	6	4	188	1389	7.50
Trout, Unspecified	64	25	19	12	18	13	13	6	5	6	181	1360	7.34
Deer, Unspecified	35	37	30	28	15	8	10	6	7	6	182	1327	7.16
Moose	27	25	27	17	11	18	14	11	7	7	164	1096	5.91
Elk	20	35	26	10	16	11	8	8	6	4	144	1016	5.48
Pheasant	38	21	23	10	11	10	4	3	9	3	132	985	5.32
Arctic Grayling	15	21	11	11	5	5	4	6	3	2	83	601	3.24
Yellow Walleye	12	9	12	9	5	9	7	4	3	1	71	482	2.60
Goose, Unspecified	4	9	7	13	7	9	6	9	1	5	70	413	2.23
Bighorn Sheep	7	10	7	11	6	5	7	5	4	1	63	406	2.19
Owl, Unspecified	4	5	6	10	10	11	4	5	3	6	64	361	1.95
Bison	15	6	6	4	6	2	3	2	1	3	48	349	1.88
Eagle, Unspecified	8	3	11	6	5	5	6	4	4	1	53	337	1.82
White Pelican	9	7	6	5	8	5	2	3	2	3	50	333	1.80
Rainbow Trout	12	7	4	3	4	5	0	1	1	1	38	291	1.57
Beaver	8	4	2	8	6	6	2	3	3	4	46	281	1.52
Bear, Unspecified	8	5	2	7	6	5	1	3	5	6	48	280	1.51
Hawk, Unspecified	4	6	3	4	9	3	5	6	9	4	53	275	1.48
Duck, Unspecified	1	7	6	5	9	1	4	5	3	5	46	257	1.39
Yellow Perch	3	5	7	8	5	1	3	4	3	5	44	257	1.39
Mountain Goat	2	10	5	5	3	3	4	4	4	1	41	255	1.38
Timber Wolf	7	5	4	4	3	6	3	2	4	2	40	251	1.35
Grouse, Unspecified	6	4	5	5	5	3	4	3	1	1	37	244	1.32
Partridge	1	8	10	3	6	3	7	3	2	2	45	241	1.30
Canada Goose	4	5	4	5	3	3	3	3	1	3	34	211	1.14
Sharptailed Grouse	5	4	3	3	5	4	1	3	3	0	31	200	1.08

Continued ...

Table 26. Continued.

Species	Number of Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
Whitefish, Unspecified	3	7	4	3	2	3	1	1	1	1	26	183	0.99
Fox, Unspecified	3	0	6	4	3	5	4	3	3	1	32	181	0.98
Bluebird, Unspecified	7	4	3	1	1	2	1	1	1	3	24	165	0.89
Grizzly Bear	5	2	7	2	2	1	0	1	1	1	22	161	0.87
Swan, Unspecified	0	7	5	2	2	2	1	1	2	2	24	152	0.82
Cougar	0	4	2	4	5	2	3	3	2	0	25	145	0.78
Fish, Unspecified	7	3	2	2	1	2	0	0	0	0	17	143	0.77
Great Northern Pike	0	5	5	4	1	1	0	1	2	3	22	134	0.72
Coyote	3	1	1	4	3	2	2	5	2	2	25	132	0.71
Whitetailed Deer	1	4	5	3	1	1	1	1	1	0	18	127	0.69
Bird, Unspecified	2	1	4	3	4	1	0	2	1	1	19	120	0.65
Lake Trout	2	3	2	2	3	2	1	0	2	0	17	113	0.61
Wildlife, Unspecified	10	1	0	0	0	0	0	0	0	2	13	111	0.60
Whooping Crane	2	3	3	1	2	2	1	0	1	1	16	107	0.58
Mule Deer	3	1	1	3	2	1	3	2	0	1	17	104	0.56
Rabbit, Unspecified	1	1	4	3	1	1	4	0	1	2	18	103	0.56
Everything	9	1	0	0	0	0	0	0	1	0	11	101	0.55
Squirrel, Unspecified	0	2	3	0	4	2	4	1	2	2	20	101	0.55
Brown Trout	4	4	1	1	0	0	0	1	1	0	12	96	0.52
Great Blue Heron	4	2	0	3	2	0	0	0	2	0	13	95	0.51
Caribou	3	2	1	2	0	2	0	1	3	4	18	93	0.50
Crane, Unspecified	2	2	1	3	0	1	1	0	0	2	12	78	0.42
Black Bear	2	3	0	3	0	1	1	0	0	0	10	77	0.42
Upland Bird, Unspecified	3	1	1	1	1	2	1	0	1	0	11	76	0.41
Meadowlark, Unspecified	0	2	2	0	1	2	5	1	0	0	13	73	0.39
Ruffed Grouse	2	1	1	2	1	2	0	2	0	0	11	73	0.39
Lynx	0	1	2	3	1	1	1	1	3	1	14	71	0.38
Falcon, Unspecified	3	1	0	1	1	1	2	0	2	1	12	70	0.38

Continued ...

Table 26. Continued.

Species	Number of Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
Loon, Unspecified	1	0	4	1	1	1	1	1	0	1	11	68	0.37
Otter	2	2	1	0	1	2	0	1	0	1	10	66	0.36
Cutthroat Trout	2	2	1	0	1	0	1	2	0	0	9	62	0.33
Brook Trout	0	1	3	0	1	2	3	0	0	0	10	61	0.33
Chipmunk	1	0	0	3	1	1	0	3	1	3	13	56	0.30
Robin	1	0	0	2	2	0	0	2	6	1	14	55	0.30
Oriole, Unspecified	1	0	1	2	1	2	1	0	0	1	9	53	0.29
Song Bird, Unspecified	1	0	1	2	0	1	1	0	0	2	8	43	0.23
Fisher	0	4	0	0	0	0	0	1	0	0	5	39	0.21
Hummingbird, Unspecified	2	1	0	0	0	1	0	0	1	2	7	38	0.21
Goldeye	0	1	1	0	2	0	0	1	1	0	6	34	0.18
Sandhill Crane	0	2	0	0	2	0	1	0	0	0	5	34	0.18
Peregrin Falcon	1	1	1	0	0	0	1	0	1	0	5	33	0.18
Trumpeter Swan	2	0	0	1	0	0	0	1	0	3	7	33	0.18
Wild Turkey	0	1	2	0	1	0	0	0	1	0	5	33	0.18
Bobcat	1	0	1	0	1	0	0	2	0	0	5	30	0.16
Wild Horses	1	1	1	0	0	0	0	0	1	0	4	29	0.16
Mallard Duck	1	1	0	0	1	0	0	1	0	0	4	28	0.15
Badger	0	0	1	1	1	1	0	0	0	1	5	27	0.15
Muskrat	0	1	0	0	0	1	2	1	1	0	6	27	0.15
"Birds of Prey"	0	1	0	2	0	0	0	1	0	0	4	26	0.14
Red Fox	0	0	0	1	1	2	0	0	1	1	6	26	0.14
Mink	0	0	0	0	1	1	2	1	1	1	7	25	0.13
Bald Eagle	1	0	0	0	1	0	1	1	0	0	4	23	0.12
Golden Eagle	1	1	0	0	0	0	1	0	0	0	3	23	0.12
Blue Jay	0	0	1	1	0	0	1	0	1	0	4	21	0.11
Furbearers, Unspecified	0	0	0	1	2	0	0	0	0	0	3	19	0.10
Small Bird	1	1	0	0	0	0	0	0	0	0	2	19	0.10

Continued ...

Table 26. Continued.

Species	Number of Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
Finch, Unspecified	0	2	0	0	0	0	0	0	0	0	2	18	0.10
Migratory Bird, Unspecified	1	0	1	0	0	0	0	0	0	0	2	18	0.10
Sage Grouse	0	1	0	0	0	0	0	3	0	0	4	18	0.10
Wren, Unspecified	0	1	0	0	0	1	1	0	0	0	3	18	0.10
Porcupine	0	0	1	0	0	1	1	0	0	0	3	17	0.09
Ptarmigan	0	0	0	1	1	0	0	1	0	1	4	17	0.09
Splake	0	1	1	0	0	0	0	0	0	0	2	17	0.09
Swallow, Unspecified	0	0	1	1	0	0	0	0	0	1	3	16	0.09
Weasel	0	0	1	0	1	0	0	0	1	0	3	16	0.09
Goldfinch, Unspecified	1	0	0	0	0	0	0	1	0	1	3	14	0.08
Osprey	0	0	0	2	0	0	0	0	0	0	2	14	0.08
Curlew	0	1	0	0	0	0	1	0	0	0	2	13	0.07
Dolly Varden	0	0	1	0	0	0	0	1	1	0	3	13	0.07
Snowy Owl	0	0	0	0	2	0	0	0	0	0	2	12	0.06
Purple Martin	0	0	0	0	1	1	0	0	0	0	2	11	0.06
Spruce Grouse	0	0	0	1	0	0	0	1	0	1	3	11	0.06
Woodpecker, Unspecified	0	0	0	0	1	1	0	0	0	0	2	11	0.06
Anything	1	0	0	0	0	0	0	0	0	0	1	10	0.05
"Gopher"	0	0	0	1	0	0	0	0	1	1	3	10	0.05
Sturgeon	1	0	0	0	0	0	0	0	0	0	1	10	0.05
Turdidae	1	0	0	0	0	0	0	0	0	0	1	10	0.05
Animal, Unspecified	0	1	0	0	0	0	0	0	0	0	1	9	0.05
Kingbird, Unspecified	0	0	0	0	0	1	1	0	0	0	2	9	0.05
Snipe	0	0	1	0	0	0	0	0	0	1	2	9	0.05
Wolverine	0	1	0	0	0	0	0	0	0	0	1	9	0.05
Woodchuck	0	1	0	0	0	0	0	0	0	0	1	9	0.05
Baltimore Oriole	0	0	1	0	0	0	0	0	0	0	1	8	0.04

Continued ...

Table 26. Continued.

Species	Number of Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
Crow	0	0	0	0	0	1	0	0	1	0	2	7	0.04
Horned Lark	0	0	0	1	0	0	0	0	0	0	1	7	0.04
Small Animals	0	0	0	1	0	0	0	0	0	0	1	7	0.04
Whistling Swan	0	0	0	1	0	0	0	0	0	0	1	7	0.04
Wood Duck	0	0	0	1	0	0	0	0	0	0	1	7	0.04
Hoary Marmot	0	0	0	0	1	0	0	0	0	0	1	6	0.03
Red-Winged Blackbird	0	0	0	0	0	0	1	0	1	0	2	6	0.03
"Tree" Squirrel	0	0	0	0	1	0	0	0	0	0	1	6	0.03
Blackbird, Unspecified	0	0	0	0	0	1	0	0	0	0	1	5	0.03
Carnivora, Unspecified	0	0	0	0	0	1	0	0	0	0	1	5	0.03
Fringillidae	0	0	0	0	0	0	1	0	0	0	1	4	0.02
Gull, Unspecified	0	0	0	0	0	0	1	0	0	0	1	4	0.02
Horned Lizard	0	0	0	0	0	0	1	0	0	0	1	4	0.02
Marten	0	0	0	0	0	0	1	0	0	0	1	4	0.02
Marmot, Unspecified	0	0	0	0	0	0	1	0	0	0	1	4	0.02
Skylark, Unspecified	0	0	0	0	0	0	1	0	0	0	1	4	0.02
Wood Warbler, Unspecified	0	0	0	0	0	0	1	0	0	0	1	4	0.02
Chickadee, Unspecified	0	0	0	0	0	0	0	1	0	0	1	3	0.02
Skunk	0	0	0	0	0	0	0	1	0	0	1	3	0.02
Double-crested Cormorant	0	0	0	0	0	0	0	0	1	0	1	2	0.01
Killdeer	0	0	0	0	0	0	0	0	1	0	1	2	0.01
Longeared Owl	0	0	0	0	0	0	0	0	1	0	1	2	0.01
Packrat	0	0	0	0	0	0	0	0	1	0	1	2	0.01
Big Game, Unspecified	0	0	0	0	0	0	0	0	0	1	1	1	0.01
Frog	0	0	0	0	0	0	0	0	0	1	1	1	0.01
Magpie	0	0	0	0	0	0	0	0	0	1	1	1	0.01
Snowshoe Hare	0	0	0	0	0	0	0	0	0	1	1	1	0.01

Continued ...

Table 26. Continued.

Species	Number of Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
Non-Alberta Species	3	15	7	5	7	9	2	1	3	1	53	361	1.95
TOTAL	689	689	689	689	689	689	689	689	689	689	6,890	18,531	100.00
SUMMARY:													
NO ANSWER	210	268	309	364	412	452	485	509	526	545	4,080	0	0.00
BIRDS: Pheasant	38	21	23	10	11	10	4	3	9	3	132	985	5.32
Goose	8	14	11	18	10	12	9	12	2	8	104	624	3.37
Grouse	13	10	9	11	11	9	5	12	4	2	86	546	2.95
Eagle	10	4	11	6	6	5	8	5	4	1	60	383	2.07
Owl	4	5	6	10	12	11	4	5	4	6	67	375	2.02
White Pelican	9	7	6	5	8	5	2	3	2	3	50	333	1.80
Duck	2	8	6	6	10	1	4	6	3	5	51	292	1.58
Hawk	4	6	3	4	9	3	5	6	9	4	53	275	1.48
Partridge	1	8	10	3	6	3	7	3	2	2	45	241	1.30
Crane	4	7	4	4	4	3	3	0	1	3	33	219	1.18
Swan	2	7	5	4	2	2	1	2	2	5	32	192	1.04
Other	30	20	24	24	18	19	22	11	21	17	206	1,223	6.60
SUB TOTAL	125	117	118	105	107	83	74	68	63	59	919	5,688	30.69
ANIMALS: Deer	39	42	36	34	18	10	14	9	8	7	217	1,558	8.41
Pronghorn Antelope	51	24	34	27	10	9	12	11	6	4	188	1,389	7.50
Moose	27	25	27	17	11	18	14	11	7	7	164	1,096	5.91

Continued ...

Table 26. Continued.

Species		Number of Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
SUMMARY (cont.)														
	Elk	20	35	26	10	16	11	8	8	6	4	144	1,016	5.48
	Bear	15	10	9	12	8	7	2	4	6	7	80	518	2.80
	Bison	15	6	6	4	6	2	3	2	1	3	48	349	1.88
	Beaver	8	4	2	8	6	6	2	3	3	4	46	281	1.52
	Mountain Goat	2	10	5	5	3	3	4	4	4	1	41	255	1.38
	Timber Wolf	7	5	4	4	3	6	3	2	4	2	40	251	1.35
	Fox	3	0	6	5	4	7	4	3	4	2	38	207	1.12
	Other	19	32	26	34	30	23	29	26	24	21	264	1,482	7.99
	SUB TOTAL	206	193	181	160	115	102	95	83	73	62	1,270	8,402	45.34
AQUATIC LIFE:	Trout	84	42	30	18	27	22	18	10	9	7	267	1,983	10.70
	Arctic Grayling	15	21	11	11	5	5	4	6	3	2	83	601	3.24
	Yellow Walleye	12	9	12	9	5	9	7	4	3	1	71	482	2.60
	Yellow Perch	3	5	7	8	5	1	3	4	3	5	44	257	1.39
	Other	11	17	14	9	6	6	1	4	5	5	78	535	2.89
	SUB TOTAL	125	94	74	55	48	43	33	28	23	20	543	3,858	20.82

Continued ...

Table 26. Concluded.

Species	Number of Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
FISH & WILDLIFE UNSPECIFIED	20	2	0	0	0	0	0	0	1	2	25	222	1.20
NON-ALBERTA SPECIES	3	15	7	5	7	9	2	1	3	1	53	361	1.95
TOTAL	689	689	689	689	689	689	689	689	689	689	6,890	18,531	100.00

[a] Among the 689 respondents, 479 provided the name of at least one species they would like to see increased populations of in Alberta.

[b] The scores are weighted sums of the rankings in which "1st" is weighted 10, "2nd" weighted 9, and so on to "10th" which is weighted 1. Each of the 479 respondents listed, on average, 5.9 species.

Table 27. Alberta location preferences for fish and wildlife viewing by provincial survey respondents, 1975.

Area	Number of Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	No Answer	Total	Score[b]	Percent of Total Score
Mountain Areas	162	144	112	41	17	16	9	4	1	183	689	3,825	18.0
Forested Areas	118	107	91	82	46	21	8	5	2	209	689	3,397	16.0
National Parks	104	92	94	58	48	19	19	15	5	235	689	3,086	14.5
Provincial Parks	39	101	103	80	61	32	17	11	7	238	689	2,873	13.5
Wilderness Areas	93	62	70	54	84	31	20	16	16	243	689	2,799	13.2
Roadside Areas	28	25	39	35	34	44	85	71	11	317	689	1.689	7.9
Range Lands	17	20	35	31	34	121	68	33	8	322	689	1,676	7.9
Cultivated Lands	21	13	10	13	20	27	69	97	68	351	689	1.118	5.3
Urban Areas	7	8	14	12	13	19	19	58	181	358	689	792	3.7
TOTAL	589	572	568	406	357	330	314	310	299	2,456	6,201	21,255	100.0

[a] Among the 689 respondents, 589 indicated preferences for at least one type of area in Alberta in which they like to see fish and wildlife.

[b] The scores are weighted sums of the rankings in which "1st" is weighted 9, "2nd" weighted 8, and so on to "9th" which is weighted 1. Each of the 589 respondents ranked, on average, 6.4 areas.

Table 28. Comments on the importance of provincial fish and wildlife resources provided by provincial survey respondents, 1975.

Comment[a]	Number of Respondents
Stricter hunting and fishing regulations & enforcement	37
Reduce hunting	18
More fish stocking	17
Fish and wildlife very important	13
Reduce fishing	12
Must save fish and wildlife for future generations	11
Fish and wildlife in wilderness provides peace, pleasure and relaxation	10
Fish and wildlife important for recreational and educational reasons	9
Need more camping and other related facilities	9
Like to see Alberta kept as natural as possible	7
Reduce or prohibit non-resident hunting	6
Enough fish and wildlife are already extinct	6
Action should be taken now to stop further fish and wildlife population declines	6
Maintain a "balance of nature"	6
Increase upland bird populations	5
Don't get out much but regard the existence of fish and wildlife as important	5
Fish and wildlife increasingly important as human population and automation grow	5
Not able to get out to enjoy fish and wildlife	5
Like to see Alberta kept more natural and preserved	5
Too much exploitation at present	5
More education required on the value of fish and wildlife	5
Curb water pollution	4
Ban hunting	4
I only spot wildlife by chance but enjoy it	4
Healthy environment for animals means more animals and a better environment for Albertans	4
Develop resources but with time and care	4
Wildlife should be in all terrains	4
Control predators--wolves and coyotes	4
Fish and wildlife enjoyment is the greatest experience	3
Fish and wildlife provide appreciation of beauty and natural processes	3
Fish & wildlife are easier to maintain than to reclaim	3
Fish & wildlife destruction would be a disgrace to all	3
Flora is as important as fauna	3
Do not hunt or fish	3

Continued ...

Table 28. Continued.

Comment[a]	Number of Respondents
Fish and wildlife are great tourist attractions	3
Fish and wildlife are more important than oil	3
Preserve all forms of fish and wildlife	3
More parks near high human population density areas	3
More television coverage of Alberta fish and wildlife	3
More patrolling in order to maintain cleanliness	3
Restrict power boating	2
Nature is always beautiful	2
Our family has enjoyed fish and wildlife all our lives	2
Wilderness impossible to imagine without fish and wildlife	2
Not too interested in fish and wildlife	2
Fish and wildlife should be given preference	2
Fish and wildlife should be restored for pleasure of seeing in natural state	2
Raven and crow populations are too great in some areas	2
Need more trails and fewer roads in parks	2
More provincial parks in wooded areas	2
As parks become more widely used we must preserve other forest and mountain areas	2
More wilderness areas and huts for hikers	2
Improve local roads	2
Government should purchase the Alberta Game Farm	2
Save trees and bush on roadside	2
Encourage farmers to grow hedge rows	2
More bush to cover for animals	2
Reduce land and resource development	2
More private land and less selling to builders	2
Stop pollution and littering	2
Keep up public education program	2
Publicize Alberta hunting program	2
Less restriction regarding private wildlife rearing i.e., pheasants	2
Ban snowmobiles	2
Few lakes in our area	1
Fish and wildlife enjoyment is priceless	1
More care of fish resources	1
More access to fish and wildlife	1
Natural environment important	1
Importance of fish & wildlife increases as leisure increases	1
Man learns his relationship to nature through wildlife resources	1

Continued ...

Table 28. Continued.

Comment[a]	Number of Respondents
Wildlife is an important gene pool for testing drugs, etc.	1
Prefer geological formations and plant life over wildlife	1
Too much emphasis on wildlife; industry is important and will have to disrupt environment somewhat	1
Vast areas must be reserved	1
Should restore wildlife in populated areas	1
Should study development in North to see changes	1
Protect animals from man's onslaught	1
Permit development only if fish and wildlife can be maintained	1
Hope all fish and wildlife populations increase	1
Have fear for certain species, especially in North	1
Some species now scarce due to poor management, e.g., pheasants because of hen season	1
Particularly like small birds	1
Reptiles and amphibians should be taken into consideration	1
Lakes and streams in Edson area ignored by Fish and Wildlife Division	1
Stop cattle grazing along stream beds	1
Government should provide food for wild turkeys released in Southwestern Alberta	1
Spraying of insects should be re-evaluated	1
Some species, e.g. ducks and geese, are destructive to grain crops	1
Ducks, geese and bears should be shot any time	1
Eliminate grizzly bears as they kill too many people	1
Move bears to high mountain areas to increase safety	1
AOSERP study area shouldn't become a disaster like strip mine areas in the Eastern Slopes	1
Don't need hatcheries or stocking in parks	1
Set up more parks	1
Need more areas for horseback riding	1
Need more provincial parks rather than national parks	1
Need more public and private reserves	1
Access to lakes in Area 2 needed to ease overcrowding	1
Too many access roads	1
Need provincial parks on Beaver River	1
Need more access to rivers	1
CFB bombing ranges limited access to North	1
Clean shores and bottoms of lakes	1

Continued ...

Table 28. Concluded.

Comment[a]	Number of Respondents
Facilities in Peace area used more every year	1
Need more fish and game clubs and activities	1
Shouldn't do anything to help lazy fishermen and hunters	1
Let nature take care of itself	1
More publicity on fish and wildlife resources necessary	1
Increase bag and creel limits	1
Too many fishing regulations	1
More policing of campsites, especially for drinking	1
Keep commercial business out of national parks	1
Miscellaneous comments[b]	27
TOTAL NUMBER OF COMMENTS[c]	390

[a] Each questionnaire receipient was asked to give any additional comments which might help to evaluate the importance of fish and wildlife in Alberta.

[b] Includes comments which did not pertain to evaluation of the importance of fish and wildlife or could not be interpreted.

[c] Among the 689 respondents, 420 gave no comment, 144 provided one comment and 123 provided two comments.

Table 29. Significance between first and second mailings on selected variables for provincial survey respondents, 1975.

Variable[a]		Chi Square	Degrees of Freedom	Percent Significance[b]
Family Size		8.001	9	53.41
Age of Respondent		66.130	69	58.11
Family Income		22.558	9	1.04
Hours of Respondent's Fish & Wildlife Enjoyment	-Birds	70.835	50	2.78
	-Animals	69.977	56	13.10
	-Aquatic Life	53.394	49	30.92
Respondent's Extramarket Benefits	-Birds	26.860	21	17.55
	-Animals	24.137	24	45.38
	-Aquatic Life	22.947	21	34.68
Family Participation in:				
- Fishing Activities		1.374	2	50.30
- Fish & Wildlife Enjoyment in AOSERP Study Area		5.667	3	12.90

[a] Among the 689 respondents, there were 363 in the first mailing and 326 in the second mailing.

[b] The percentage for all variables, except family income and hours of bird enjoyment, are greater than the 5.00 per cent level of significance, thus providing no evidence of differences between first and second mailings. The remaining two variables have percentages less than the 5.00 per cent level of significance, indicating a difference between first and second mailings. Consequently, the overall results are inconclusive at the 5.00 per cent level of significance. However, since the percentages for all variables are greater than 1.00 per cent, there is no evidence of differences between first and second mailings at the 1.00 per cent level of significance.

Table 30. Fish and wildlife enjoyment experience in the AOSERP study area during 1975 by families of provincial survey respondents, 1975.

Category	Number of Families	Percent of Total Response	Adjusted Percent of Response[a]
Participated if Fish and Wildlife Enjoyment in the AOSERP Study Area at Least Once During 1975	20	2.9	3.6
Did Not Participate in Fish and Wildlife Enjoyment in the AOSERP Study Area During 1975	669	97.1	96.4
TOTAL	689	100.0	100.0

[a]Calculations are made with the exclusion of the number of families who did not engage in fish and wildlife enjoyment activities during 1975 (689 - 116 = 573).

Table 31. Rating of fish and wildlife enjoyment in the AOSERP study area in relation to province-wide fish and wildlife enjoyment by provincial survey respondents, 1975.

Ratings	Number of Respondents	Percent of Total Response	Adjusted Percent of Response[a]	Cumulative Adjusted Percent of Response[a]
No Answer	3	15.0	n.a.	n.a.
AOSERP Study Area Fish and Wildlife Enjoyment Better Than Province as a Whole	6	30.0	35.3	35.3
AOSERP Study Area Fish and Wildlife Enjoyment As Good As Province as a Whole	8	40.0	47.1	82.4
AOSERP Study Area Fish and Wildlife Enjoyment Worse Than Province as a Whole	3	15.0	17.6	100.0
TOTAL	20	100.0	100.0	

[a] The calculations are made with the exclusion of those respondents who did not give a rating (20 - 3 = 17).

Table 32. Preferences for species enjoyed in the AOSERP study area by provincial survey respondents, 1975.

Species	Number of Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
No Answer	6	7	8	10	12	15	16	16	16	17	123	0	0.0
Moose	1	3	2	0	0	1	0	0	0	0	7	58	10.8
Deer, Unspecified	1	0	2	2	2	1	0	0	0	0	8	57	10.7
Bear, Unspecified	3	2	0	0	0	0	0	0	0	0	5	48	9.0
Black Bear	2	3	0	0	0	0	0	0	0	0	5	47	8.8
Goose, Unspecified	1	1	1	1	0	0	0	0	0	0	4	34	6.4
Yellow Walleye	2	0	0	0	1	0	0	0	0	0	3	26	4.9
Squirrel, Unspecified	0	0	1	1	0	1	1	0	0	0	4	24	4.5
Duck, Unspecified	0	1	0	1	1	0	0	0	0	0	3	22	4.1
Elk	1	0	0	1	0	1	0	0	0	0	3	22	4.1
Arctic Grayling	1	1	0	0	0	0	0	0	0	0	2	19	3.6
Great Northern Pike	1	1	0	0	0	0	0	0	0	0	2	19	3.6
Bird, Unspecified	0	1	0	1	0	0	0	0	0	1	3	17	3.2
Chipmunk	0	0	1	0	0	0	1	0	0	0	2	12	2.2
Bison	0	0	0	0	1	0	1	0	0	0	2	10	1.9
Whistling Swan	1	0	0	0	0	0	0	0	0	0	1	10	1.9
Crow	0	0	0	1	0	0	0	0	1	0	2	9	1.7
Chickadee, Unspecified	0	0	1	0	0	0	0	0	0	0	1	8	1.5
Great Blue Heron	0	0	1	0	0	0	0	0	0	0	1	8	1.5
Grizzly Bear	0	0	1	0	0	0	0	0	0	0	1	8	1.5
Goldeye	0	0	1	0	0	0	0	0	0	0	1	8	1.5
Trout, Unspecified	0	0	1	0	0	0	0	0	0	0	1	8	1.5
Canada Goose	0	0	0	1	0	0	0	0	0	0	1	7	1.3
Whitetailed Deer	0	0	0	1	0	0	0	0	0	0	1	7	1.3

Continued ...

Table 32. Continued.

Species	Number of Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
Fox, Unspecified	0	0	0	0	1	0	0	0	0	0	1	6	1.1
Mule Deer	0	0	0	0	1	0	0	0	0	0	1	6	1.1
Rabbit, Unspecified	0	0	0	0	1	0	0	0	0	0	1	6	1.1
Partridge	0	0	0	0	0	1	0	0	0	0	1	5	0.9
Beaver	0	0	0	0	0	0	1	0	0	0	1	4	0.7
Muskrat	0	0	0	0	0	0	0	1	0	0	1	3	0.6
Raven	0	0	0	0	0	0	0	1	0	0	1	3	0.6
Robin	0	0	0	0	0	0	0	1	0	0	1	3	0.6
Everything	0	0	0	0	0	0	0	0	1	0	1	2	0.4
Loon, Unspecified	0	0	0	0	0	0	0	0	1	0	1	2	0.4
Yellow Perch	0	0	0	0	0	0	0	0	1	0	1	2	0.4
Gull, Unspecified	0	0	0	0	0	0	0	0	0	1	1	1	0.2
Lunx	0	0	0	0	0	0	0	0	0	1	1	1	0.2
Not Specified	0	0	0	0	0	0	0	1	0	0	1	3	0.6
TOTAL	20	20	20	20	20	20	20	20	20	20	200	535	100.0
SUMMARY:													
NO ANSWER	6	7	8	10	12	15	16	16	16	17	123	0	0.0
BIRDS: Goose	1	1	1	2	0	0	0	0	0	0	5	41	7.7
Duck	0	1	0	1	1	0	0	0	0	0	3	22	4.1
Bird, Unspec.	0	1	0	1	0	0	0	0	0	1	3	17	3.2
Other	1	0	2	1	0	1	0	2	2	1	10	49	9.2
SUB TOTAL	2	3	3	5	1	1	0	2	2	2	21	129	24.1

Concluded.

Table 32.

Species		Number of Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score	Percent of Total Score
ANIMALS:	Bear	5	5	1	0	0	0	0	0	0	0	11	103	19.3
	Deer	1	0	2	3	3	1	0	0	0	0	10	70	13.1
	Moose	1	3	2	0	0	1	0	0	0	0	7	58	10.8
	Squirrel	0	0	1	1	0	1	1	0	0	0	4	24	4.5
	Elk	1	0	0	1	0	1	0	0	0	0	3	22	4.1
	Other	0	0	1	0	3	0	3	1	0	1	9	42	7.9
	SUB TOTAL	8	8	7	5	6	4	4	1	0	1	44	319	59.6
AQUATIC LIFE:	Yellow Walleye	2	0	0	0	1	0	0	0	0	0	3	26	4.9
	Arctic Grayling	1	1	0	0	0	0	0	0	0	0	2	19	3.6
	Great Northern Pike	1	1	0	0	0	0	0	0	0	0	2	19	3.6
	Other	0	0	2	0	0	0	0	0	1	0	3	18	3.4
	SUB TOTAL	4	2	2	0	1	0	0	0	1	0	10	82	15.4
MISCELLANEOUS		0	0	0	0	0	0	0	1	1	0	2	5	0.9
TOTAL		20	20	20	20	20	20	20	20	20	20	200	535	100.0

[a] Among the 20 respondents active in the AOSERP study area during 1975, 14 provided the name of at least one species each that they enjoyed through nonconsumptive use during that year.

[b] The scores are weighted sums of the rankings in which "1st" is weighted 10, "2nd" weighted 9, and so on to "10th" which is weighted 1. Each of the 14 respondents listed, on average, 5.5 species.

Table 33. AOSERP study area locations most often frequented for fish and wildlife enjoyment by families of provincial survey respondents, 1975.

Location	AOSERP Grid Number[a]	Number of Families[b]	Percent of Total No. of Families[c]
Fort McMurray	9	11	68.8
Anzac	10	4	25.0
Athabasca River	1, 4-7, 9, 10	4	25.0
FortMacKay	6	3	20.3
Fort MacKay Indian Reserve	6, 7	2	12.5
Greogoire Lake	10	2	12.5
Hangingstone River	9, 10	2	12.5
Fort Chipewyan	1	1	6.3
Lynton	9	1	6.3
Peace River	1	1	6.3
Stony Mountain	3	1	6.3

[a] Grid number locations are given in Figure 3.

[b] Among the 20 respondents, 16 provided the name of at least one location each.

[c] Calculations are based on the 16 families represented here.

Table 34. Comments on the importance of AOSERP study area fish and wildlife resources provided by provincial survey respondents, 1975

Comment[a]	Number of Respondents
Haven't been in the area but may enjoy it in the future	3
Need strict control of waste disposal	3
Do not know the area	2
Need more public and private reserves	2
Need better stocking program at Gregoire Lake and at lakes around Fort McMurray	1
Need to clean rough fish out of some lakes	1
Delicate ecology of the area requires caution in land use	1
Only spot wildlife by chance but do enjoy it	1
There appears to be a decline in wildlife - should act now to stop it	1
Did not see any game all season	1
More access needed	1
More information input by fish and game association needed	1
No need to restrict development as there is lots of land	1
Miscellaneous Comments[b]	2
TOTAL NUMBER OF COMMENTS[c]	21

[a] Each questionnaire recipient was asked to give any additional comment which might help to evaluate the importance of fish and wildlife resources in the AOSERP study area.

[b] Includes comments which did not pertain to evaluation of the importance of fish and wildlife or could not be interpreted.

[c] A total of 16 respondents, 11 of whom provided one comment and 5 of whom provided two comments.

Table 35. Length of residence in the AOSERP study area by survey respondents.

Number of Years	Household Residents		Camp Residents[a]	
	Number of Respondents	Percent of Total	Number of Respondents	Percent of Total
No Answer	2	0.7	0	0.0
0.1	28	9.1	47	45.6
0.2	21	6.8	11	10.7
0.3	19	6.2	8	7.8
0.4	5	1.6	7	6.8
0.5	13	4.2	4	3.9
0.6	4	1.3	2	1.9
0.7	13	4.2	1	1.0
0.8	11	3.6	3	2.9
0.9	6	2.0	1	1.0
1.0	28	9.1	5	4.9
1.2	1	0.3	0	0.0
1.3	1	0.3	0	0.0
1.5	13	4.2	3	2.9
1.8	1	0.3	0	0.0
1.9	1	0.3	0	0.0
2.0	27	8.8	5	4.9
2.5	7	2.3	1	1.0
3.0	14	4.6	2	1.9
3.5	2	0.7	0	0.0
4.0	8	2.6	0	0.0
4.5	2	0.7	0	0.0
5.0	14	4.6	0	0.0
6.0	5	1.6	0	0.0
6.5	2	0.7	0	0.0
7.0	8	2.6	0	0.0
8.0	10	3.3	1	1.0
8.5	2	0.7	0	0.0
9.0	20	6.5	0	0.0
9.5	1	0.3	1	1.0
10.0	3	1.0	0	0.0
11.0	1	0.3	0	0.0
12.0	2	0.7	0	0.0
13.0	1	0.3	0	0.0
14.0	1	0.3	0	0.0
15.0	2	0.7	0	0.0
18.0	1	0.3	0	0.0
19.0	2	0.7	0	0.0
20.0	1	0.3	0	0.0
23.0	1	0.3	1	1.0

Continued ...

Table 35. Concluded.

Number of Years	Household Residents		Camp Residents[a]	
	Number of Respondents	Percent of Total	Number of Respondents	Percent of Total
26.0	1	0.3	0	0.0
29.0	1	0.3	0	0.0
53.0	1	0.3	0	0.0
TOTAL	307	100.0	103	100.0
Mean[b]	3.4		0.9	
Mode[b]	0.1 and 1.0		0.1	
Median[b]	1.5		0.2	
Standard Deviation[b]	5.2		2.6	

[a]These persons are employees of Syncrude (including Bechtel) and Great Canadian Oil Sands and live in company camps. Their families (i.e., those employees who have families) live outside of the AOSERP study area.

[b]Mean, Mode, Median and Standard Deviation are expressed in number of years.

Table 36. Occupations of AOSERP study area survey respondents.

Occupation	Household Residents				Camp Residents	
	Respondents		Spouses		Respondents	
	Number of Respondents	Adjusted Percent of Total[a]	Number of Spouses	Adjusted Percent of Total[a]	Number of Respondents	Adjusted Percent of Total[a]
No Answer	6	n.a.	16	n.a.	1	n.a.
Professional & Technical	17	5.6	22	10.2	6	5.9
Managerial	18	6.0	13	6.0	8	7.8
Contractor & Sub-Contractor	0	0.0	2	0.9	1	1.0
Farming	0	0.0	1	0.5	0	0.0
Tradesmen	36	12.0	36	16.7	51	50.0
Transportation & Communication	2	0.7	2	0.9	0	0.0
Service Occupations	18	6.0	6	2.8	2	2.0
Sales	2	0.7	3	1.4	0	0.0
Operative	23	7.6	17	7.9	13	12.7
Armed Forces	1	0.3	0	0.0	0	0.0
Clerical	16	5.3	15	7.0	0	0.0
Labourers	18	6.0	10	4.7	17	16.7
Homemaker	101	33.6	33	15.3	0	0.0
Student	7	2.3	2	0.9	2	2.0
Retired	0	0.0	0	0.0	0	0.0
Not in Labour Force	9	3.0	4	1.9	0	0.0
Miscellaneous	17	5.6	18	8.4	1	1.0
GCOS Unspecified	10	3.3	20	9.3	1	1.0
Syncrude Unspecified[b]	6	2.0	11	5.1	0	0.0
TOTAL	307	100.0	231	100.0	103	100.0

[a]Calculations are made with the exclusion of those persons for whom no occupation is given.

[b]Syncrude also includes Bechtel.

Table 37. Family size of AOSERP study area survey respondents.

Family Size[a]	Number of Respondents[b]	Percent of Total Response
1	77	25.1
2	50	16.3
3	57	18.6
4	58	18.9
5	44	14.3
6	14	4.6
7	4	1.3
8	1	0.3
9	2	0.7
TOTAL	307	100.0

Mean[c], 3.06; Mode[c], 1.00; Median[c], 2.97;

Standard Deviation[c], 1.70.

[a]Family size includes only immediate family members living at home.

[b]Number of respondents excludes the 103 camp residents in the survey sample for whom the family size is considered 1.00 for purposes of the study area even though many have immediate families outside of the AOSERP study area.

[c]Calculations are expressed in terms of number of persons.

Table 38. Household size of AOSERP study area survey respondents.

Household Size[a]	Number of Respondents[b]	Percent of Total Response
1	62	20.2
2	57	18.6
3	58	18.9
4	60	19.5
5	46	15.0
6	17	5.5
7	3	1.0
8	2	0.7
9	2	0.7
TOTAL	307	100.0

Mean[c], 3.18; Mode[c], 1.00; Median[c], 3.10;

Standard Deviation[c], 1.68.

[a]Household size includes immediate family members living at home plus other household residents.

[b]Number of respondents excludes the 103 camp residents in the survey sample for whom the household size is considered 1.00 for purposes of the study area.

[c]Calculations are expressed in terms of number of persons.

Table 39. Ages of AOSERP study area survey respondents.

Age in Years	Household Residents				Camp Residents	
	Respondents		Spouses		Respondents	
	Number of Respondents	Adjusted Percent of Total[a]	Number of Spouses	Adjusted Percent of Total[a]	Number of Respondents	Adjusted Percent of Total[a]
No Answer	4	n.a.	10	n.a.	1	n.a.
16	0	0.0	1	0.5	1	1.0
17	3	1.0	1	0.5	0	0.0
18	4	1.3	1	0.5	2	2.0
19	14	4.6	3	1.4	3	2.9
20	8	2.6	2	0.9	4	3.9
21	8	2.6	4	1.8	7	6.9
22	5	1.7	9	4.1	9	8.8
23	23	7.6	8	3.6	9	8.8
24	20	6.6	7	3.2	4	3.9
25	15	5.0	13	5.9	7	6.9
26	16	5.3	7	3.2	3	2.9
27	13	4.3	6	2.7	3	2.9
28	10	3.3	12	5.4	4	3.9
29	9	3.0	10	4.5	0	0.0
30	15	5.0	13	5.9	3	2.9
31	10	3.3	6	2.7	1	1.0
32	16	5.3	8	3.6	3	2.9
33	6	2.0	13	5.9	1	1.0
34	9	3.0	8	3.6	4	3.9
35	6	2.0	5	2.3	4	3.9
36	7	2.3	15	6.8	2	2.0
37	11	3.6	2	0.9	1	1.0
38	3	1.0	10	4.5	1	1.0
39	10	3.3	5	2.3	1	1.0

Continued ...

Table 39. Continued.

Age in Years	Household Residents				Camp Residents	
	Respondents		Spouses		Respondents	
	Number of Respondents	Adjusted Percent of Total[a]	Number of Spouses	Adjusted Percent of Total[a]	Number of Respondents	Adjusted Percent of Total[a]
40	4	1.3	12	5.4	3	2.9
41	3	1.0	3	1.4	3	2.9
42	7	2.3	3	1.4	2	2.0
43	3	1.0	1	0.5	0	0.0
44	4	1.3	3	1.4	0	0.0
45	8	2.6	5	2.3	2	2.0
46	2	0.7	0	0.0	2	2.0
47	2	0.7	1	0.5	0	0.0
48	2	0.7	0	0.0	1	1.0
49	0	0.0	1	0.5	2	2.0
50	4	1.3	2	0.9	3	2.9
51	2	0.7	2	0.9	1	1.0
52	2	0.7	1	0.5	0	0.0
53	3	1.0	0	0.0	2	2.0
54	0	0.0	3	1.4	1	1.0
55	4	1.3	2	0.9	0	0.0
56	2	0.7	2	0.9	1	1.0
57	2	0.7	2	0.9	0	0.0
58	1	0.3	2	0.9	1	1.0
59	2	0.7	2	0.9	0	0.0
60	3	1.0	2	0.9	1	1.0
61	0	0.0	1	0.5	0	0.0
62	1	0.3	2	0.9	0	0.0
66	1	0.3	0	0.0	0	0.0
TOTAL	307	100.0	231	100.0	103	100.0

Continued ...

Table 39. Concluded.

Age in Years	Household Residents				Camp Residents	
	Respondents		Spouses		Respondents	
	Number of Respondents	Adjusted Percent of Total[a]	Number of Spouses	Adjusted Percent of Total[a]	Number of Respondents	Adjusted Percent of Total[a]
Mean[a,b]	31.97		33.89		31.22	
Mode[a,b]	23.00		36.00		22.00 and 23.00	
Median[a,b]	29.32		31.90		27.00	
Standard Deviation[a,b]	10.99		18.86		10.97	

[a]Calculations are made with the exclusion of those persons for whom no age is given.

[b]Mean, mode, median, and standard deviation are expressed in number of years of age.

Table 40. Total number of children per family of AOSERP study area survey respondents.

Number of Children per Family	Number of Respondents[a]	Percent of Total Respondents	Percent of Respondents With Children[b]	Total Number of Children
0	126	41.0	n.a.	0
1	59	19.2	32.6	59
2	59	19.2	32.6	118
3	41	13.4	22.7	123
4	14	4.6	7.7	56
5	4	1.3	2.2	20
6	4	1.3	2.2	24
TOTAL	307	100.0	100.0	400

Respondents: Mean, 1.30; Mode, 0.00; Median, 1.00; Standard Deviation, 1.41.

Respondents with Children: Mean[b], 2.21; Mode[b], 1.00 and 2.00; Median[b], 2.00; Standard Deviation[b], 1.17.

[a]Number of respondents excludes the 103 camp residents in the survey sample for whom the number of children is considered 0.00 for purposes of the study area even though many have children residing outside of the AOSERP study area.

[b]Calculations are made with the exclusion of those respondents who have no children living with them in their home (307 - 126 = 181). Among the 400 children, 250 were over five years of age (Table 7) in which case the number of children over 5 years of age per respondent is 0.81 and the number of children over 5 years of age per respondent with children is 1.38.

Table 41. Ages of children living in households of AOSERP study area survey respondents.

Age	Number of Children						Total Number of Children	Percent of Total
	Oldest Child	Second Oldest Child	Third Oldest Child	Fourth Oldest Child	Fifth Oldest Child	Sixth Oldest Child		
1	12	15	8	5	1	0	41	10.3
2	10	9	7	1	0	0	27	6.7
3	13	13	3	2	0	1	32	8.0
4	14	6	6	1	1	0	28	4.5
5	8	5	6	1	1	1	22	5.5
6	10	8	8	1	2	0	29	7.3
7	5	5	2	1	0	2	15	3.7
8	8	12	3	2	0		25	6.3
9	9	9	3	0	2		23	5.7
10	10	7	2	2	0		21	5.3
11	11	3	3	1	0		18	4.5
12	12	5	4	3	1		25	6.3
13	6	9	2	1			18	4.5
14	5	5	1	1			12	3.0
15	13	3	4				20	5.0
16	8	5	1				14	3.5
17	11	3					14	3.5
18	6						6	1.5
19	4						4	1.0
20	3						3	0.7
21	2						2	0.5
24	1						1	0.2
TOTAL	181	122	63	22	8	4	400	100.0

Mean, 8.20; Mode, 1.00; Median, 8.00; Standard Deviation, 5.29.

Table 42. Ages of non-family household members in households of AOSERP study area survey respondents.

Age	Number of Non-Family Household Members[a]	Percent of Total	Adjusted Percent of Total[b]
Not Specified	4	10.3	n.a.
1	2	5.1	5.7
5	1	2.6	2.9
9	1	2.6	2.9
12	1	2.6	2.9
16	1	2.6	2.9
17	1	2.6	2.9
19	4	10.3	11.4
20	1	2.6	2.9
21	3	7.7	8.6
22	2	5.1	5.7
23	3	7.7	8.6
24	1	2.6	2.9
25	2	5.1	5.7
26	1	2.6	2.9
27	1	2.6	2.9
28	3	7.7	8.6
33	1	2.6	2.9
34	1	2.6	2.9
40	1	2.6	2.9
65	1	2.6	2.9
80	1	2.6	2.9
87	1	2.6	2.9
91	1	2.6	2.9
TOTAL	39	100.0	100.0

Mean[b], 27.83; Mode[b], 19.00; Median[b], 22.67;

Standard Deviation[b], 20.92

[a]Includes family relatives other than respondents spouse or children.

[b]Calculations are made with the exclusion of nonfamily household members for whom no age was given (39 - 4 = 35).

Table 43. Years of formal education of AOSERP study area survey respondents.

Education Category	Number of Years	Household Residents				Camp Residents	
		Respondents		Spouses		Respondents	
		Number of Respondents	Adjusted Percent of Total[a]	Number of Spouses	Adjusted Percent of Total[a]	Number of Respondents	Adjusted Percent of Total[a]
Not Specified	n.a.	3	n.a.	22	n.a.	2	n.a.
Grade School	3	1	0.3	0	0.0	0	0.0
	4	1	0.3	2	1.0	1	1.0
	5	1	0.3	1	0.5	0	0.0
	6	2	0.7	1	0.5	2	2.0
	7	6	2.0	2	1.0	2	2.0
	8	10	3.3	9	4.3	3	3.0
	9	25	8.2	16	7.7	4	4.0
High School	10	50	16.5	34	16.3	10	9.9
	11	35	11.5	24	11.5	9	8.9
	12	85	28.0	61	29.2	26	25.7
University	1	16	5.3	6	2.9	3	3.0
	2	9	3.0	9	4.3	3	3.0
	3	17	5.6	6	2.9	5	5.0
	4	15	4.9	14	6.7	6	5.9
	5	7	2.3	7	3.4	2	2.0
	6	3	1.0	3	1.4	2	2.0
	7	2	0.7	1	0.5	0	0.0
	8	1	0.3	0	0.0	1	1.0
	9	0	0.0	1	0.5	0	0.0
Technical School	1	5	1.6	2	1.0	9	8.9
	2	9	3.0	2	1.0	5	5.0
	3	4	1.3	5	2.4	1	1.0
	4	0	0.0	3	1.4	7	6.9
TOTAL		307	100.0	231	100.0	103	100.0

[a]Calculations are made with the exclusion of those persons for whom years of formal education were not provided.

7. Are there any species of wildlife that you would like to see more populations of in the region?

1. _____ 3. _____ 5. _____

2. _____ 4. _____ 6. _____

8. If there were greater accessibility to wildlife in the region, would you go where wildlife might be found:

more often _____ the same amount _____ less often _____

9. Do you think that wildlife is moving away from the town of Fort McMurray?

yes _____ no _____

If yes, how concerned are you?

extremely unconcerned _____ extremely concerned

1 2 3 4 5

10. If wildlife enjoyment were not free, how much would you be willing to pay (above and beyond expenses incurred) for a day of enjoyment in the Athabasca Oil Sands region:

animals: $ _____ per day per adult

$ _____ per day per child

birds: $ _____ per day per adult

$ _____ per day per child

fish: $ _____ per day per adult

$ _____ per day per child

11. How much is it worth to you to ensure that wildlife is preserved in the region?

$ _____ per year.

12. How would you rate the WILDLIFE ENJOYMENT activities in the Athabasca Oil Sands Region compared to your other WILDLIFE ENJOYMENT activities in Alberta as a whole?

better than _____ as good as _____ worse than _____

Personal information is confidential and will be aggregated for the purpose of determining any relationship that exists between occupation, family size, income, or education and the use of wildlife resources.

13. Residence _____ How long have you lived here? _____

14. Occupation: yourself: _____ Sex: M F

spouse: _____

15. How many of your immediate family are living at your residence? Ages?

yourself _____ age _____

spouse _____ age _____

children _____ ages _____

others _____ ages _____

16. Number of years education completed:

yourself:	0	1	2	3	4	5	6	7	8	9	Grade School
	10	11	12								High School
	1	2	3	4	5	6	7	8	9		University
	1	2	3	4							Technical School
spouse:	0	1	2	3	4	5	6	7	8	9	Grade School
	10	11	12								High School
	1	2	3	4	5	6	7	8	8		University
	1	2	3	4							Technical School

17. Total income of you and your family in 1975: (check one)

under $5,000 _____ $20,000 - $25,000 _____

$5,001 - 10,000 _____ 25,001 - 30,000 _____

10,001 - 15,000 _____ 30,001 - 35,000 _____

15,001 - 20,000 _____ 35,001 or over _____

18. Comments: _____

_____

_____

Table 44. Family income of AOSERP study area survey respondents, 1975.

Income Class	Household Residents			Camp Residents		
	Number of Respondents	Percent of Total	Adjusted Percent of Total[a]	Number of Respondents	Percent of Total	Adjusted Percent of Total[a]
No Answer	12	3.9	n.a.	7	6.8	n.a.
Less than $5,000	23	7.5	7.8	12	11.7	12.5
$ 5,001 - $10,000	32	10.4	10.8	20	19.4	20.8
$10,001 - $15,000	57	18.6	19.3	21	20.4	21.9
$15,001 - $20,000	55	17.9	18.6	13	12.6	13.5
$20,001 - $25,000	57	18.6	19.3	18	17.5	18.8
$25,001 - $30,000	37	12.1	12.5	8	7.8	8.3
$30,001 - $35,000	20	6.5	6.8	3	2.9	3.1
$35,001 and over	14	4.6	4.7	1	1.0	1.0
TOTAL	307	100.0	100.0	103	100.0	100.0
Mean[a,b]	$18,653			$14,896		
Mode[a,b]	$12,500 and $22,500			$12,500		
Median[a,b]	$17,500			$12,500		
Standard Deviation[a,b]	$ 9,630			$ 8,477		

[a]Calculations are made with the exclusion of those respondents who did not indicate family income.

[b]Calculations for household residents are made on the assumption that the 14 responses in the $35,001 and over income class are distributed as follows:

Continued ...

Table 44. Concluded.

$35,001 - $40,000; 7	$45,001 - $50,000; 2
$40,001 - $45,000; 4	$50,001 - $55,000; 1

The one camp resident in the $35,001 and over income class is assumed to have made $37,500. Midpoints and corresponding frequencies for each income class were utilized in the calculations. These assumptions are such that the calculations provided are estimates of actual sample measures.

Table 45. Season preference for fish and wildlife enjoyment by AOSERP study area survey respondents.

Season	Household Residents		Camp Residents	
	Number of Respondents	Adjusted Percent of Total	Number of Respondents	Adjusted Percent of Total
Not Specified	3	n.a.	3	n.a.
Summer	160	52.6	31	31.0
All Year Round	39	12.8	30	30.0
Fall	33	10.9	12	12.0
Spring	14	4.6	5	5.0
Spring-Fall	14	4.6	5	5.0
Summer-Fall	12	3.9	10	10.0
Spring-Summer	12	3.9	0	0.0
Winter	10	3.3	4	4.0
Spring-Summer-Fall	9	3.0	2	2.0
Winter-Summer	1	0.3	0	0.0
Fall-Winter	0	0.0	1	1.0
TOTAL	307	100.0	103	100.0

Table 46. Degree of seeking fish and wildlife actively during outdoor activities by AOSERP study area survey respondents.

Item	Household Residents		Camp Residents	
	Number of Respondents	Percent of Total	Number of Respondents	Percent of Total
Fish and Wildlife Seen Accidently	142	46.3	34	33.0
Fish and Wildlife Sought Actively Sometimes	102	33.2	30	29.1
Fish and Wildlife Sought Actively	63	20.5	39	37.9
TOTAL	307	100.0	103	100.0

Table 47. Importance of seeing fish and wildlife during outdoor activities by AOSERP study area survey respondents.

Degree of Importance	Household Residents		Camp Residents	
	Number of Respondents	Percent of Total	Number of Respondents	Percent of Total
Extremely Unimportant	9	2.9	2	1.9
Moderately Unimportant	15	4.9	5	4.9
Neutral Importance	53	17.3	4	3.9
Moderately Important	147	47.9	47	45.6
Extremely Important	83	27.0	45	43.7
TOTAL	307	100.0	103	100.0

Table 48. Preferences for species desired by household residents among AOSERP study area survey respondents.

Species	Number of Household Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
No Answer	13	73	113	155	198	242	261	279	289	294	1,917	0	0.00
Bear, Unspecified	51	34	20	13	5	2	3	0	2	0	130	1,123	12.54
Moose	35	49	25	11	6	2	1	0	0	2	131	1,120	12.50
Deer, Unspecified	52	31	22	13	3	1	2	0	2	1	127	1,102	12.30
Everything	29	6	5	3	2	1	1	1	0	0	48	429	4.79
Bird, Unspecified	19	11	8	6	1	5	0	0	0	0	50	426	4.76
Squirrel, Unspecified	10	13	9	6	5	4	1	0	0	0	48	385	4.30
Wolf	3	8	11	12	5	1	3	1	0	0	44	324	3.62
Anything	25	0	4	2	1	0	1	0	0	0	33	306	3.42
Beaver	5	5	6	5	7	8	4	3	0	0	43	285	3.18
Lynx	1	7	4	7	7	2	1	1	1	0	31	215	2.40
Chipmunk	4	5	4	6	3	2	2	0	0	0	26	195	2.18
Caribou	1	4	7	7	4	2	2	0	0	1	28	194	2.17
Rabbit	3	6	5	1	1	0	0	0	0	1	17	138	1.54
Coyote	0	2	3	5	3	2	1	0	0	1	17	110	1.23
Fox, Unspecified	3	0	3	2	4	1	1	2	0	0	16	107	1.19
Elk	3	4	0	3	2	0	0	1	0	0	13	102	1.14
Duck, Unspecified	1	4	1	1	2	3	2	0	1	0	15	98	1.09
Goose, Unspecified	1	2	3	1	1	2	2	1	0	1	14	87	0.97
Frog	1	0	4	2	2	0	1	1	0	0	11	75	0.84
Black Bear	3	2	2	0	0	1	0	1	0	0	9	72	0.80
Grouse, Unspecified	1	1	2	1	2	1	1	1	0	3	13	69	0.77
Lake Trout	3	1	2	2	0	0	0	0	0	0	8	69	0.77
Small Mammals	1	4	2	1	0	0	0	0	0	0	8	69	0.77
Big Game, Unspecified	4	0	1	1	2	0	0	0	0	0	8	67	0.75
Loon, Unspecified	0	1	2	3	2	1	0	0	1	1	11	66	0.74
Snowshoe Hare	2	2	0	0	3	0	1	0	0	0	8	60	0.67

Continued ...

Table 48. Continued.

Species	Number of Household Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
Fish, Unspecified	2	1	2	1	0	1	0	0	0	0	7	57	0.64
Whitetailed Deer	3	0	3	0	0	0	0	0	0	0	6	54	0.60
Mink	0	2	0	3	0	1	0	2	1	0	9	52	0.58
Muskrat	2	2	0	0	1	0	1	1	0	0	7	51	0.57
Eagle, Unspecified	1	0	0	3	1	0	2	1	1	0	9	50	0.56
Red Fox	0	2	1	2	0	2	0	0	0	0	7	50	0.56
Groundsquirrel, Unspecified	0	1	0	4	2	0	0	0	0	0	7	49	0.55
Yellow Walleye	2	0	2	1	0	1	0	0	0	0	6	48	0.54
Ptarmigan, Unspecified	0	0	1	2	2	1	2	0	0	0	8	47	0.52
Large Animals	2	0	1	0	3	0	0	0	0	0	6	46	0.51
Otter	0	2	1	0	3	0	0	0	1	0	7	46	0.51
Great Northern Pike	1	1	1	0	1	1	1	1	0	0	7	45	0.50
Whitefish	1	1	1	0	2	0	1	0	0	0	6	43	0.48
Hawk, Unspecified	1	0	1	1	2	0	0	1	1	0	7	42	0.47
Raven	1	1	1	1	1	0	0	0	1	0	6	42	0.47
Robin	1	0	2	1	0	1	0	0	0	1	5	39	0.44
Woodpecker, Unspecified	1	1	1	1	0	0	0	0	2	0	6	38	0.42
Flying Squirrel	1	1	1	0	0	0	1	0	0	0	4	31	0.35
Weasel	0	0	3	1	0	0	0	0	0	0	4	31	0.35
Porcupine	0	0	2	0	1	1	0	1	0	0	5	30	0.33
Animals, Unspecified	2	1	0	0	0	0	0	0	0	0	3	29	0.32
Badger	1	1	1	0	0	0	0	0	1	0	4	29	0.32
Trout, Unspecified	0	0	1	2	1	0	0	0	0	0	4	28	0.31
White Pelican	0	0	1	2	0	0	0	2	0	0	5	28	0.31
Young Animals	1	2	0	0	0	0	0	0	0	0	3	28	0.31
Bats	1	0	1	1	0	0	0	0	0	0	3	25	0.28

Continued ...

Table 48. Continued.

Species	Number of Household Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
Bluebird, Unspecified	0	2	0	0	1	0	0	0	0	0	3	24	0.27
Mouse, Unspecified	0	1	1	1	0	0	0	0	0	0	3	24	0.27
Bobcat	1	0	0	1	1	0	0	0	0	0	3	23	0.26
Marten	1	0	0	0	1	1	0	0	1	0	4	23	0.26
Deer Mouse	0	0	0	1	1	1	1	0	0	0	4	22	0.25
Small Birds	1	0	0	0	2	0	0	0	0	0	3	22	0.25
Swallow, Unspecified	0	1	1	0	0	1	0	0	0	0	3	22	0.25
Arctic Grayling	0	0	1	0	0	2	0	1	0	0	4	21	0.23
Blue Jay	0	0	1	0	1	0	1	1	0	0	4	21	0.23
"Gopher"	0	0	1	1	1	0	0	0	0	0	3	21	0.23
Skunk	0	1	0	0	2	0	0	0	0	0	3	21	0.23
Swan, Unspecified	0	0	0	1	0	1	2	0	0	1	5	21	0.23
Yellow Perch	1	0	0	1	0	0	0	1	0	0	3	20	0.22
Common Garter Snake	0	2	0	0	0	0	0	0	0	0	2	18	0.20
Grosbeak, Unspecified	1	0	1	0	0	0	0	0	0	0	2	18	0.20
Owl, Unspecified	1	0	1	0	0	0	0	0	0	0	2	18	0.20
Small Animals	1	0	0	1	0	0	0	0	0	0	2	17	0.19
Large Mammals	1	0	0	0	0	1	0	0	0	0	2	15	0.17
"Birds of Prey"	0	1	0	0	0	1	0	0	0	0	2	14	0.16
"Tree Squirrel"	0	0	1	0	0	1	0	0	0	0	2	13	0.15
Wolverine	0	0	0	1	0	1	0	0	0	0	2	12	0.13
Crane, Unspecified	0	0	0	0	1	1	0	0	0	0	2	11	0.12
Mule Deer	0	1	0	0	0	0	0	0	1	0	2	11	0.12
Great Blue Heron	0	0	0	0	0	2	0	0	0	0	2	10	0.11
Song Bird, Unspecified	1	0	0	0	0	0	0	0	0	0	1	10	0.11
Blackbird, Unspecified	0	0	0	0	1	0	0	1	0	0	2	9	0.10
Fisher	0	0	0	0	0	1	1	0	0	0	2	9	0.10

Continued ...

Table 48. Continued.

Species	Number of Household Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
Hummingbird, Unspecified	0	1	0	0	0	0	0	0	0	0	1	9	0.10
Mammals, Unspecified	0	1	0	0	0	0	0	0	0	0	1	9	0.10
Osprey	0	1	0	0	0	0	0	0	0	0	1	9	0.10
Toad	0	1	0	0	0	0	0	0	0	0	1	9	0.10
Canada Goose	0	0	1	0	0	0	0	0	0	0	1	8	0.09
Woodchuck	0	0	1	0	0	0	0	0	0	0	1	8	0.09
Bison	0	0	0	1	0	0	0	0	0	0	1	7	0.08
Killdeer	0	0	0	1	0	0	0	0	0	0	1	7	0.08
Snowy Owl	0	0	0	1	0	0	0	0	0	0	1	7	0.08
Chickadee, Unspecified	0	0	0	0	1	0	0	0	0	0	1	6	0.07
Goldfinch, Unspecified	0	0	0	0	1	0	0	0	0	0	1	6	0.07
Lemming	0	0	0	0	0	0	1	0	1	0	2	6	0.07
Teal, Unspecified	0	0	0	0	1	0	0	0	0	0	1	6	0.07
Woodwarbler, Unspecified	0	0	0	0	1	0	0	0	0	0	1	6	0.07
Ruffed Grouse	0	0	0	0	0	1	0	0	0	0	1	5	0.06
Pheasant	0	0	0	0	0	0	1	0	0	0	1	4	0.04
Sparrow, Unspecified	0	0	0	0	0	0	1	0	0	0	1	4	0.04
Horned Lark	0	0	0	0	0	0	0	1	0	0	1	3	0.03
Sucker	0	0	0	0	0	0	0	1	0	0	1	3	0.03
Non-Alberta Species	0	0	1	1	0	0	0	0	0	0	2	15	0.17
TOTAL	307	307	307	307	307	307	307	307	307	307	3,070	8,958	100.00

Continued ...

Table 48. Continued.

Species	Number of Household Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
SUMMARY:													
NO ANSWER	13	73	113	155	198	242	261	279	289	294	1,917	0	0.00
BIRDS: Duck	1	4	1	1	2	3	2	0	1	0	15	98	1.09
Goose	1	2	4	1	1	2	2	1	0	1	15	95	1.06
Other	29	21	23	24	21	16	10	8	6	6	164	1,119	12.49
SUBTOTAL	31	27	28	26	24	21	14	9	7	7	194	1,312	14.64
ANIMALS: Bear	54	36	22	13	5	3	3	1	2	0	139	1,195	13.34
Deer	55	32	25	13	3	1	2	0	3	1	135	1,167	13.03
Moose	35	49	25	11	6	2	1	0	0	2	131	1,120	12.50
Squirrel	11	15	11	10	7	5	2	0	0	0	61	478	5.34
Wolf	3	8	11	12	5	1	3	1	0	0	44	324	3.62
Beaver	5	5	6	5	7	8	4	3	0	0	43	285	3.18
Lynx	1	7	4	7	7	2	1	1	1	0	31	215	2.40
Rabbit	5	8	5	1	4	0	1	0	0	1	25	198	2.21
Chipmunk	4	5	4	6	3	2	2	0	0	0	26	195	2.18
Caribou	1	4	7	7	4	2	2	0	0	1	28	194	2.17
Fox	3	2	4	4	4	3	1	2	0	0	23	157	1.75
Coyote	0	2	3	5	3	2	1	0	0	1	17	110	1.23
Elk	3	4	0	3	2	0	0	1	0	0	13	102	1.14
Other	18	17	15	14	16	7	4	4	5	0	100	720	8.03
SUBTOTAL	198	194	142	111	76	38	27	13	11	6	816	6,460	72.12

Continued ...

Table 48. Concluded.

Species	Number of Household Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
AQUATIC LIFE: Trout	3	1	3	4	1	0	0	0	0	0	12	97	1.08
Other	7	3	7	3	3	5	2	4	0	0	34	237	2.65
SUBTOTAL	10	4	10	7	4	5	2	4	0	0	46	334	3.73
MISCELLANEOUS[c]	55	9	13	7	5	1	3	2	0	0	95	837	9.34
NON-ALBERTA SPECIES	0	0	1	1	0	0	0	0	0	0	2	15	0.17
TOTAL	307	307	307	307	307	307	307	307	307	307	3,070	8,958	100.00

[a]Among the 307 interviewees, 294 provided the name of at least one species or species group they would like to see.

[b]The scores are weighted sums of the rankings in which "1st" is weight 10, "2nd" weight 9, and so on to "10th" which is weighted 1. Each of the 294 interviewees, on average, gave 3.92 species or species groups.

[c]Includes "Anything", "Everything", "Frog", "Snake", and "Toad".

Table 49. Preferences for species desired by camp residents among AOSERP study area survey respondents.

Species	Number of Camp Resident Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
No Answer	3	18	26	39	50	67	78	87	89	95	550	0	0.00
Moose	14	13	10	2	3	2	0	1	1	0	46	384	10.94
Deer, Unspecified	12	12	9	4	2	1	2	0	1	0	43	355	10.12
Bear, Unspecified	9	9	10	5	2	2	1	1	0	1	40	316	9.01
Wolf	6	4	5	7	3	1	2	2	0	0	30	222	6.33
Anything	7	2	1	1	0	1	0	0	0	0	12	108	3.08
Lynx	1	3	2	2	5	0	1	0	1	0	15	103	2.94
Loon, Unspecified	5	0	2	1	0	3	1	1	0	0	13	95	2.71
Everything	7	0	0	0	2	1	0	0	0	0	10	87	2.48
Bird, Unspecified	4	4	1	0	0	0	0	0	0	0	9	84	2.39
Beaver	2	1	0	3	2	2	1	0	1	0	12	78	2.22
Hawk, Unspecified	2	1	0	3	1	2	1	1	0	1	12	74	2.11
Squirrel, Unspecified	1	1	2	3	2	0	0	0	1	0	10	70	1.99
Grouse, Unspecified	2	1	1	3	0	2	0	0	0	0	9	68	1.94
Goose, Unspecified	0	2	1	1	4	2	0	0	0	0	10	67	1.91
Eagle, Unspecified	0	1	1	0	5	1	1	1	1	0	11	61	1.74
Big Game, Unspecified	2	3	0	0	1	1	0	0	0	0	7	58	1.65
Black Bear	1	2	2	1	1	0	0	0	0	0	7	57	1.62
Otter	0	4	1	0	1	0	1	1	0	0	8	57	1.62
Caribou	0	1	2	2	2	1	0	0	0	0	8	56	1.60
Woodpecker, Unspecified	1	2	0	2	0	1	0	1	1	1	9	53	1.51
Whitetailed Deer	1	1	3	0	1	0	0	0	1	1	8	52	1.48
Duck, Unspecified	0	0	2	2	3	0	0	1	0	0	8	51	1.45
Fox, Unspecified	2	0	1	1	1	1	0	0	1	0	7	48	1.37
Chipmunk	0	1	2	2	1	0	0	0	0	0	6	45	1.28
Coyote	0	1	0	3	0	1	1	0	1	1	8	42	1.20
Red Fox	1	1	2	1	0	0	0	0	0	0	5	42	1.20

Continued ...

Table 49. Continued.

Species	Number of Camp Resident Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
Porcupine	0	1	2	1	0	1	1	0	0	0	6	41	1.17
Lake Trout	2	0	1	1	0	0	1	0	0	0	5	39	1.11
Arctic Grayling	2	0	0	0	2	0	1	0	0	0	5	36	1.03
Bat	1	1	1	0	0	1	0	0	0	0	4	32	0.91
Badger	1	1	1	0	0	0	0	1	0	0	4	30	0.85
Mammals, Unspecified	3	0	0	0	0	0	0	0	0	0	3	30	0.85
Elk	1	1	0	1	0	0	0	0	0	0	3	26	0.74
Ptarmigan, Unspecified	0	1	0	0	1	1	1	0	0	0	4	24	0.68
Marten	1	1	0	0	0	0	0	1	0	0	3	22	0.63
Weasel	0	0	0	1	0	3	0	0	1	0	5	22	0.63
Yellow Perch	0	2	0	0	0	0	0	1	0	0	3	21	0.60
Finch, Unspecified	2	0	0	0	0	0	0	0	0	0	2	20	0.57
Frog	2	0	0	0	0	0	0	0	0	0	2	20	0.57
Fish, Unspecified	1	0	1	0	0	0	0	0	0	0	2	18	0.51
Snowshoe Hare	1	0	1	0	0	0	0	0	0	0	2	18	0.51
Great Northern Pike	0	1	0	0	1	0	0	0	1	0	3	17	0.48
Swallow, Unspecified	0	1	1	0	0	0	0	0	0	0	2	17	0.48
Mink	0	0	1	0	0	0	2	0	0	0	3	16	0.46
Swan, Unspecified	0	0	1	1	0	0	0	0	0	0	2	15	0.43
Muskrat	0	1	0	0	0	1	0	0	0	0	2	14	0.40
Common Garter Snake	0	1	0	0	0	0	1	0	0	0	2	13	0.37
Large Animals	0	0	1	0	0	1	0	0	0	0	2	13	0.37
Wolverine	0	1	0	0	0	0	0	1	0	0	2	12	0.34
Yellow Walleye	0	0	0	0	0	1	1	1	0	0	3	12	0.34
Rabbit	0	0	0	1	0	0	1	0	0	0	2	11	0.31
Whitefish	0	0	0	1	0	0	1	0	0	0	2	11	0.31
Goldfinch, Unspecified	1	0	0	0	0	0	0	0	0	0	1	10	0.28

Continued ...

Table 49. Continued.

Species	Number of Camp Resident Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
Owl, Unspecified	0	0	0	0	1	0	1	0	0	0	2	10	0.28
Song Birds, Unspecified	1	0	0	0	0	0	0	0	0	0	1	10	0.28
Trout, Unspecified	1	0	0	0	0	0	0	0	0	0	1	10	0.28
Groundsquirrel, Unspecified	0	1	0	0	0	0	0	0	0	0	1	9	0.26
Woodchuck	0	1	0	0	0	0	0	0	0	0	1	9	0.26
Amphibians, Unspecified	0	0	1	0	0	0	0	0	0	0	1	8	0.23
Cougar	0	0	1	0	0	0	0	0	0	0	1	8	0.23
Large Mammals	0	0	1	0	0	0	0	0	0	0	1	8	0.23
Marmot, Unspecified	0	0	1	0	0	0	0	0	0	0	1	8	0.23
Skunk	0	0	1	0	0	0	0	0	0	0	1	8	0.23
Waxwing	0	0	1	0	0	0	0	0	0	0	1	8	0.23
Bluebird, Unspecified	0	0	0	1	0	0	0	0	0	0	1	7	0.20
Blue Jay	0	0	0	1	0	0	0	0	0	0	1	7	0.20
Canada Goose	0	0	0	1	0	0	0	0	0	0	1	7	0.20
Goldeye	0	0	0	0	1	0	0	0	0	1	2	7	0.20
Mule Deer	0	0	0	1	0	0	0	0	0	0	1	7	0.20
Raven	0	0	0	1	0	0	0	0	0	0	1	7	0.20
Reptile, Unspecified	0	0	0	1	0	0	0	0	0	0	1	7	0.20
Rodent, Unspecified	0	0	0	1	0	0	0	0	0	0	1	7	0.20
Waterfowl, Unspecified	0	0	0	1	0	0	0	0	0	0	1	7	0.20
"Birds of Prey"	0	0	0	0	1	0	0	0	0	0	1	6	0.17
Blackbird, Unspecified	0	0	0	0	0	1	0	0	0	1	2	6	0.17
Kingfisher	0	0	0	0	1	0	0	0	0	0	1	6	0.17
Mouse, Unspecified	0	0	0	0	1	0	0	0	0	0	1	6	0.17
Sandhill Crane	0	0	0	0	1	0	0	0	0	0	1	6	0.17
Upland Bird, Unspecified	0	0	0	0	1	0	0	0	0	0	1	6	0.17

Continued ...

Table 49. Continued.

Species	Number of Camp Resident Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
Brook Trout	0	0	0	0	0	1	0	0	0	0	1	5	0.14
Chickadee, Unspecified	0	0	0	0	0	0	1	0	0	0	1	4	0.11
Trumpeter Swan	0	0	0	0	0	0	1	0	0	0	1	4	0.11
Ruffed Grouse	0	0	0	0	0	0	0	1	0	0	1	3	0.09
Canada Jay	0	0	0	0	0	0	0	0	1	0	1	2	0.06
Robin	0	0	0	0	0	0	0	0	1	0	1	2	0.06
Sparrow, Unspecified	0	0	0	0	0	0	0	0	0	1	1	1	0.03
TOTAL	103	103	103	103	103	103	103	103	103	103	1,030	3,509	100.00
SUMMARY:													
NO ANSWER	3	18	26	39	50	67	78	87	89	95	552	0	0.00
BIRDS: Loon	5	0	2	1	0	3	1	1	0	0	13	95	2.71
Goose	0	2	1	2	4	2	0	0	0	0	11	74	2.11
Hawk	2	1	0	3	1	2	1	1	0	1	12	74	2.11
Grouse	2	1	1	3	0	2	0	1	0	0	10	71	2.02
Other	9	9	7	9	14	4	5	3	4	3	67	434	12.37
SUBTOTAL	18	13	11	18	19	13	7	6	4	4	113	748	21.32

Continued ...

Table 49. Concluded.

Species	Number of Camp Resident Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	Score[b]	Percent of Total Score
ANIMALS: Deer	13	13	12	5	3	1	2	0	2	1	52	414	11.80
Moose	14	13	10	2	3	2	0	1	1	0	46	384	10.94
Bear	10	11	12	6	3	2	1	1	0	1	47	373	10.63
Wolf	6	4	5	7	3	1	2	2	0	0	30	222	6.33
Lynx	1	3	2	2	5	0	1	0	1	0	15	103	2.94
Fox	3	1	3	2	1	1	0	0	1	0	12	90	2.56
Squirrel	1	2	2	3	2	0	0	0	1	0	11	79	2.25
Beaver	2	1	0	3	2	2	1	0	1	0	12	78	2.22
Other	10	18	16	12	6	10	6	4	2	1	85	599	17.07
SUBTOTAL	60	66	62	42	28	19	13	8	9	3	310	2,342	66.74
AQUATIC LIFE:	6	3	2	2	4	2	4	2	1	1	27	176	5.02
MISCELLANEOUS[c]	16	3	2	2	2	2	1	0	0	0	28	243	6.93
TOTAL	103	103	103	103	103	103	103	103	103	103	1,030	3,509	100.00

[a]Among the 103 Syncrude (Bechtel) andGCOS camp residents who were interviewed, 100 provided the names of at least one species, or species group, they would like to see.

[b]The scores are weighted sums of the rankings in which "1st" is weighted 10, "2nd" weighted 9 and so on to "10th" which is weighted 1. Each of the 100 interviewees, on average, gave 4.78 species or species groups.

[c]Includes "Anything", "Everything", "Amphibians, Unspecified", "Frog", "Common Garter Snake " and "Reptile, Unspecified".

Table 50. Preferences for increased species populations by household residents among AOSERP study area survey respondents.

Species	Number of Household Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	Total	Score[b]	Percent of Total Score
No Answer	81	209	272	290	302	305	1,459	0	0.00
Deer, Unspecified	48	12	5	1	0	0	66	371	18.11
Moose	35	7	3	0	0	0	45	257	12.54
Bear, Unspecified	19	7	3	0	0	0	29	161	7.86
Caribou	7	9	4	4	1	0	25	117	5.71
Everything	14	4	0	0	0	0	18	104	5.08
Wolf	6	7	1	2	0	0	16	81	3.95
Fox, Unspecified	9	3	2	0	1	0	15	79	3.86
Beaver	9	4	1	0	0	0	14	78	3.81
Lynx	7	1	0	1	1	0	10	52	2.54
Elk	6	3	0	0	0	0	9	51	2.49
Rabbit	3	4	0	1	0	0	8	41	2.00
Bison	5	2	0	0	0	0	7	40	1.95
Squirrel, Unspecified	2	3	1	1	0	0	7	34	1.66
Whitetailed Deer	5	0	1	0	0	0	6	34	1.66
Bird, Unspecified	4	1	1	0	0	0	6	33	1.61
Duck, Unspecified	2	2	1	0	0	0	5	26	1.27
Ptarmigan, Unspecified	2	2	0	0	0	0	4	22	1.07
Anything	2	1	1	0	0	0	4	21	1.02
Goose, Unspecified	2	1	0	1	0	0	4	20	0.98
Song Bird, Unspecified	3	0	0	0	0	0	3	18	0.88
Snowshoe Hare	1	0	1	2	0	0	4	16	0.78
Marten	1	1	1	0	0	0	3	15	0.73
Red Fox	1	1	1	0	0	0	3	15	0.73
Whitefish	1	1	1	0	0	0	3	15	0.73
White Pelican	1	1	0	1	0	0	3	14	0.68

Continued ...

Table 50. Continued.

Species	Number of Household Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	Total	Score[b]	Percent of Total Score
Otter	0	2	0	1	0	0	3	13	0.63
Coyote	1	1	0	0	0	1	3	12	0.59
Fish, Unspecified	2	0	0	0	0	0	2	12	0.59
Grouse, Unspecified	2	0	0	0	0	0	2	12	0.59
Hawk, Unspecified	2	0	0	0	0	0	2	12	0.59
Mink	2	0	0	0	0	0	2	12	0.59
Robin	2	0	0	0	0	0	2	12	0.59
Skunk	2	0	0	0	0	0	2	12	0.59
Yellow Walleye	2	0	0	0	0	0	2	12	0.59
Badger	1	1	0	0	0	0	2	11	0.54
Falcon, Unspecified	1	1	0	0	0	0	2	11	0.54
Flying Squirrel	1	1	0	0	0	0	2	11	0.54
Loon, Unspecified	1	1	0	0	0	0	2	11	0.54
Porcupine	1	1	0	0	0	0	2	11	0.54
Whooping Crane	1	1	0	0	0	0	2	11	0.54
Arctic Grayling	1	0	1	0	0	0	2	10	0.49
Black Bear	0	1	1	0	0	0	2	9	0.44
Trout, Unspecified	0	1	1	0	0	0	2	9	0.44
Large Animals	1	0	0	0	1	0	2	8	0.39
Artiodactyla, Unspecified	1	0	0	0	0	0	1	6	0.29
Ground Squirrel	1	0	0	0	0	0	1	6	0.29
Gull	1	0	0	0	0	0	1	6	0.29
Kingfisher	1	0	0	0	0	0	1	6	0.29
Partridge	1	0	0	0	0	0	1	6	0.29
Wild Turkey	1	0	0	0	0	0	1	6	0.29
Wolverine	1	0	0	0	0	0	1	6	0.29
Yellow Perch	1	0	0	0	0	0	1	6	0.29

Continued ...

Table 50. Continued.

Species	Number of Household Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	Total	Score[b]	Percent of Total Score
Blue Jay	0	1	0	0	0	0	1	5	0.24
Carnivora, Unspecified	0	1	0	0	0	0	1	5	0.24
Chipmunk	0	1	0	0	0	0	1	5	0.24
Horned Lark	0	1	0	0	0	0	1	5	0.24
Lake Trout	0	1	0	0	0	0	1	5	0.24
Osprey	0	1	0	0	0	0	1	5	0.24
Snow Goose	0	1	0	0	0	0	1	5	0.24
Swan, Unspecified	0	1	0	0	0	0	1	5	0.24
Weasel	0	1	0	0	0	0	1	5	0.24
Canada Goose	0	0	1	0	0	0	1	4	0.20
Whistling Swan	0	0	1	0	0	0	1	4	0.20
Bluebird, Unspecified	0	0	0	1	0	0	1	3	0.15
Deer Mouse	0	0	0	1	0	0	1	3	0.15
Eagle, Unspecified	0	0	0	0	1	0	1	2	0.10
"Birds of Prey"	0	0	0	0	0	1	1	1	0.05
Non-Alberta Species	0	1	2	0	0	0	3	13	0.63
TOTAL	307	307	307	307	307	307	1,842	2,049	100.00
SUMMARY:									
NO ANSWER	81	209	272	290	302	305	1,459	0	0.00
BIRDS: Goose	2	2	1	1	0	0	6	29	1.42
Duck	2	2	1	0	0	0	5	26	1.27
Ptarmigan	2	2	0	0	0	0	4	22	1.07
Other	21	9	2	2	1	1	36	188	9.18
SUBTOTAL	27	15	4	3	1	1	51	265	12.93

Continued ...

Table 50. Concluded.

Species	Number of Household Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	Total	Score	Percent of Total Score
ANIMALS: Deer	53	12	6	1	0	0	72	405	19.77
Moose	35	7	3	0	0	0	45	257	12.54
Bear	19	8	4	0	0	0	31	170	8.30
Caribou	7	9	4	4	1	0	25	117	5.71
Fox	10	4	3	0	0	0	18	94	4.59
Wolf	6	7	1	2	0	0	16	81	3.95
Beaver	9	4	1	0	0	0	14	78	3.81
Rabbit	4	4	1	3	0	0	12	57	2.78
Lynx	7	1	0	1	1	0	10	52	2.54
Elk	6	3	0	0	0	0	9	51	2.49
Squirrel	4	4	1	1	0	0	10	51	2.49
Bison	5	2	0	0	0	0	7	40	1.95
Other	11	9	1	2	1	1	25	124	6.05
SUBTOTAL	176	74	25	14	3	1	294	1,577	76.96
AQUATIC LIFE:	7	3	3	0	0	0	13	69	3.37
MISCELLANEOUS[c]	16	5	1	0	0	0	22	125	6.10
NON-ALBERTA SPECIES	0	1	2	0	0	0	3	13	0.63
TOTAL	307	307	307	307	307	307	1,842	2,049	100.00

[a]Among the 307 interviewees, 226 provided the name of at least one species, or species group, for which they would like to see increased populations of in the AOSERP study area.

[b]The scores are weighted sums of the rankings in which "1st" is weighted 6, "2nd" weighted 5, and so on to "6th" which is weighted 1. Each of the 226 interviewees, on average, gave 1.69 species or species groups.

[c]Includes "Anything" and "Everything".

Table 51. Preferences for increased species populations by camp residents among AOSERP study area survey respondents.

Species	Number of Camp Resident Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	Total	Score[b]	Percent of Total Score
No Answer	27	54	76	84	92	97	430	0	0.00
Deer, Unspecified	13	4	3	0	1	0	21	112	12.53
Wolf	10	3	0	5	0	0	18	90	10.07
Lynx	5	3	4	1	0	0	13	64	7.16
Bear, Unspecified	7	2	2	0	1	1	13	63	7.05
Caribou	4	6	1	0	1	0	12	60	6.71
Moose	5	1	1	4	0	1	12	52	5.82
Beaver	1	3	2	0	0	0	6	29	3.24
Grouse, Unspecified	2	1	1	0	1	0	5	23	2.57
Eagle, Unspecified	2	1	1	0	0	0	4	21	2.35
Otter	1	1	2	0	0	1	5	20	2.24
White Pelican	2	0	0	0	3	0	5	18	2.01
Badger	1	2	0	0	0	0	3	16	1.79
Woodpecker, Unspecified	1	1	1	0	0	0	3	15	1.68
Fox, Unspecified	0	1	1	1	0	1	4	13	1.45
Lake Trout	1	1	0	0	0	1	3	12	1.34
Mule Deer	2	0	0	0	0	0	2	12	1.34
Rabbit	0	1	1	1	0	0	3	12	1.34
Anything	1	1	0	0	0	0	2	11	1.23
Black Bear	1	1	0	0	0	0	2	11	1.23
Common Garter Snake	1	1	0	0	0	0	2	11	1.23
Coyote	0	2	0	0	0	0	2	10	1.12
Everything	1	0	1	0	0	0	2	10	1.12
Loon, Unspecified	0	2	0	0	0	0	2	10	1.12
Flying Squirrel	0	1	1	0	0	0	2	9	1.01
Goose, Unspecified	0	1	1	0	0	0	2	9	1.01

Continued ...

Table 51. Continued.

Species	Number of Camp Resident Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	Total	Score[b]	Percent of Total Score
Squirrel, Unspecified	1	0	0	1	0	0	2	9	1.01
Whitetailed Deer	1	0	0	1	0	0	2	9	1.01
Duck, Unspecified	0	1	0	1	0	0	2	8	0.89
Snowshoe Hare	0	1	0	1	0	0	2	8	0.89
Chipmunk	0	1	0	0	1	0	2	7	0.78
Big Game, Unspecified	1	0	0	0	0	0	1	6	0.67
Crane, Unspecified	1	0	0	0	0	0	1	6	0.67
Elk	1	0	0	0	0	0	1	6	0.67
Fisher	1	0	0	0	0	0	1	6	0.67
Kingfisher	1	0	0	0	0	0	1	6	0.67
Large Animals	1	0	0	0	0	0	1	6	0.67
Lemming	1	0	0	0	0	0	1	6	0.67
Marten	0	0	1	0	1	0	2	6	0.67
Mink	0	0	1	0	1	0	2	6	0.67
Raven	1	0	0	0	0	0	1	6	0.67
Red Fox	1	0	0	0	0	0	1	6	0.67
Sandhill Crane	1	0	0	0	0	0	1	6	0.67
Skunk	1	0	0	0	0	0	1	6	0.67
Wolverine	1	0	0	0	0	0	1	6	0.67
Yellow Perch	1	0	0	0	0	0	1	6	0.67
Osprey	0	1	0	0	0	0	1	5	0.56
Ptarmigan, Unspecified	0	1	0	0	0	0	1	5	0.56
Small Animals	0	1	0	0	0	0	1	5	0.56
Swan, Unspecified	0	1	0	0	0	0	1	5	0.56
Vole	0	1	0	0	0	0	1	5	0.56
Whooping Crane	0	1	0	0	0	0	1	5	0.56
Jumping Mouse	0	0	1	0	0	0	1	4	0.45

Continued ...

Table 51. Continued.

Species	Number of Camp Resident Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	Total	Score[b]	Percent of Total Score
Porcupine	0	0	1	0	0	0	1	4	0.45
Frog	0	0	0	1	0	0	1	3	0.34
spruce Grouse	0	0	0	1	0	0	1	3	0.34
Weasel	0	0	0	1	0	0	1	3	0.34
Groundsquirrel, Unspecified	0	0	0	0	1	0	1	2	0.22
Sage Grouse	0	0	0	0	0	1	1	1	0.11
TOTAL	103	103	103	103	103	103	618	894	100.00
SUMMARY:									
NO ANSWER	27	54	76	84	92	97	430	0	0.00
BIRDS: Grouse	2	1	1	1	1	1	7	27	3.02
Eagle	2	1	1	0	0	0	4	21	2.35
Pelican	2	0	0	0	3	0	5	18	2.01
Other	5	9	2	1	0	0	17	86	9.62
SUBTOTAL	11	11	4	2	4	1	33	152	17.00

Continued ...

Table 51. Concluded.

Species	Number of Camp Resident Respondents[a] Rank of Preference 1st	2nd	3rd	4th	5th	6th	Total	Score[b]	Percent of Total Score
ANIMALS: Deer	16	4	3	1	1	0	25	133	14.88
Wolf	10	3	0	5	0	0	18	90	10.07
Bear	8	3	2	0	1	1	15	74	8.28
Lynx	5	3	4	1	0	0	13	64	7.16
Caribou	4	6	1	0	1	0	12	60	6.71
Moose	5	1	1	4	0	1	12	52	5.82
Beaver	1	3	2	0	0	0	6	29	3.24
Otter	1	1	2	0	0	1	5	20	2.24
Rabbit	0	2	1	2	0	0	5	20	2.24
Squirrel	1	1	1	1	1	0	5	20	2.24
Fox	1	1	1	1	0	1	5	19	2.13
Other	8	7	4	1	3	0	23	108	12.08
SUBTOTAL	60	35	22	16	7	4	144	689	77.08
AQUATIC LIFE	2	1	0	0	0	1	3	18	2.01
MISCELLANEOUS[c]	3	2	1	1	0	0	7	35	3.91
TOTAL	103	103	103	103	103	103	618	894	100.00

[a]Among the 103 interviewees, 76 provided the name of at least one species, or species group, for which they sould like to see increased populations of in the AOSERP study area.

[b]The scores are weighted sums of the rankings in whick "1st" is weighted 6, "2nd" weighted 5, and so on to "6th" which is weighted 1. Each of the 76 interviewees, on average, gave 2.47 species or species groups.

[c]Includes "Anything", "Everything", "Frog", and "Common Garter Snake".

Table 52. Importance of accessibility in fish and wildlife enjoyment in the AOSERP study area by survey respondents.

Item	Household Residents		Camp Residents	
	Number of Respondents	Percent of Total	Number of Respondents	Percent of Total
No Answer	6	2.0	1	1.0
With greater access would go more often where fish and wildlife might be found	212	69.1	63	61.2
With greater access would go as often where fish and wildlife might be found	80	26.1	32	31.1
With greater access would go less often where fish and wildlife might be found	1	0.3	2	1.9
Do not know	3	1.0	0	0.0
Do not have transportation	3	1.0	1	1.0
Do not have time to go where fish and wildlife might be found	2	0.7	4	3.9
TOTAL	307	100.0	103	100.0

Table 53. Type of accessibility desired for fish and wildlife enjoyment in the AOSERP study area by survey respondents.

Type of access	Household Residents		Camp Residents	
	Number of Respondents	Percent of Total	Number of Respondents	Percent of Total
No Answer	131	42.7	37	35.9
Trails	72	23.5	27	26.2
Roads, Unspecified	49	16.0	19	18.4
Roads and Trails	30	9.8	7	6.8
No More Access	11	3.6	7	6.8
Rough Roads	6	2.0	2	1.9
Paved Roads	6	2.0	2	1.9
Water Courses	2	0.7	0	0.0
Airplane/Helicoptor	0	0.0	2	1.9
TOTAL	307	100.0	103	100.0

Table 54. Perception of fish and wildlife disappearance from area in and around Fort McMurray by AOSERP study area survey respondents.

Item	Household Residents		Camp Residents	
	Number of Respondents	Percent of Total	Number of Respondents	Percent of Total
No Answer	2	0.7	9	8.7
Fish and Wildlife Are Disappearing from Fort McMurray	199	64.8	57	55.3
Fish and Wildlife Are Not Disappearing from Fort McMurray	33	10.7	6	5.8
Do Not Know	73	23.8	31	30.1
TOTAL	307	100.0	103	100.0

Table 55. Degree of concern over perceived fish and wildlife disappearance from area in and around Fort McMurray by AOSERP study area survey respondents.

Degree of Concern	Household Residents			Camp Residents		
	Number of Respondents	Percent of Total	Adjusted Percent of Total[a]	Number of Respondents	Percent of Total	Adjusted Percent of Total[a]
Not Applicable[b]	108	35.2	n.a.	46	44.7	n.a.
Extremely Unconcerned	33	10.7	16.6	16	15.5	28.1
Moderately Unconcerned	27	8.8	13.6	10	9.7	17.5
Neither Concerned nor Unconcerned	39	12.7	19.6	8	7.8	14.0
Moderately Concerned	64	20.8	32.2	17	16.5	29.8
Extremely Concerned	36	11.7	18.1	6	5.8	10.5
TOTAL	307	100.0	100.0	103	100.0	100.0

[a]Calculations are made with the exclusion of those respondents who did not indicate a belief that fish and wildlife were disappearing (Table 54).

[b]Includes those respondents who indicated fish and wildlife were not disappearing, gave no answer, or did not know (Table 54).

Table 56. Extramarket benefits per adult per day from fish and wildlife enjoyment by household residents among AOSERP study area survey respondents.

Extramarket Benefits per Adult per Day[a]	BIRDS			ANIMALS			AQUATIC LIFE		
	Number of Households	Percent of Total	Adjusted Percent of Total[b]	Number of Households	Percent of Total	Adjusted Percent of Total[b]	Number of Households	Percent of Total	Adjusted Percent of Total[b]
Not Specified	130	42.3	n.a.	113	36.8	n.a.	136	44.3	n.a.
Priceless	4	1.3	n.a.	3	1.0	n.a.	4	1.3	n.a.
$ 0.00	37	12.1	21.4	23	7.5	12.0	55	17.9	32.9
0.50	6	2.0	3.5	3	1.0	1.6	3	1.0	1.8
1.00	22	7.2	12.7	16	5.2	8.4	18	5.9	10.8
1.50	12	3.9	6.9	10	3.3	5.2	8	2.6	4.8
2.00	30	9.8	17.3	49	16.0	25.7	27	8.8	16.2
2.25	1	0.3	0.6	1	0.3	0.5	1	0.3	0.6
2.50	12	3.9	6.9	12	3.9	6.3	10	3.3	6.0
3.00	11	3.6	6.4	14	4.6	7.3	10	3.3	6.0
3.50	2	0.7	1.2	2	0.7	1.0	2	0.7	1.2
4.00	0	0.0	0.0	2	0.7	1.0	0	0.0	0.0
5.00	27	8.8	15.6	34	11.1	17.8	22	7.2	13.2
6.00	1	0.3	0.6	1	0.3	0.5	1	0.3	0.6
7.50	0	0.0	0.0	2	0.7	1.0	0	0.0	0.0
8.00	2	0.7	1.2	0	0.0	0.0	1	0.3	0.6
10.00	5	1.6	2.9	11	3.6	5.8	3	1.0	1.8
12.50	0	0.0	0.0	1	0.3	0.5	0	0.0	0.0
15.00	1	0.3	0.6	3	1.0	1.6	2	0.7	1.2
17.50	1	0.3	0.6	1	0.3	0.5	1	0.3	0.6
20.00	3	1.0	1.7	4	1.3	2.1	2	0.7	1.2
25.00	0	0.0	0.0	1	0.3	0.5	0	0.0	0.0
30.00	0	0.0	0.0	1	0.3	0.5	0	0.0	0.0
50.00	0	0.0	0.0	0	0.0	0.0	1	0.3	0.6
TOTAL	307	100.0	100.0	307	100.0	100.0	307	100.0	100.0

Continued ...

Table 56. Concluded.

Extramarket Benefits per Adult per Day[a]	BIRDS			ANIMALS			AQUATIC LIFE		
	Number of House-holds	Percent of Total	Adjusted Percent of Total[b]	Number of House-holds	Percent of Total	Adjusted Percent of Total[b]	Number of House-holds	Percent of Total	Adjusted Percent of Total[b]
Mean[b]	$2.74			$3.83			$2.64		
Mode[b]	$0.00			$2.00			$0.00		
Median[b]	$2.00			$2.00			$1.50		
Standard Deviation[b]	$3.52			$4.61			$5.00		

[a]Extramarket benefit is the value of a day's fish and wildlife enjoyment in the AOSERP study area by a resident person, over and above what is spent (if anything) on travel and other nonconsumptive fish and wildlife recreational expenses. There were 577 household adults represented in the survey.

[b]Calculations are made with the exclusion of the number of households for which no dollar value extramarket benefits were give. Means, modes, medians and standard deviations are expressed in terms of dollars per day. The combined average weighted by estimated activity time among the three categories (birds, 35 percent; animals, 40 percent; and aquatic life, 25 percent) is $3.15 per adult per day.

Table 57. Extramarket benefits per day from fish and wildlife enjoyment by children of household residents among AOSERP study area respondents.

Extramarket Benefits per Child per Day[a]	BIRDS			ANIMALS			AQUATIC LIFE		
	Number of Households	Percent of Total	Adjusted Percent of Total[b]	Number of Households	Percent of Total	Adjusted Percent of Total[b]	Number of Households	Percent of Total	Adjusted Percent of Total[b]
Not Applicable[c]	126	41.0	n.a.	126	41.0	n.a.	126	41.0	n.a.
Not Specified	78	25.4	n.a.	69	22.5	n.a.	77	25.1	n.a.
Priceless	3	1.0	n.a.	3	1.0	n.a.	3	1.0	n.a.
$ 0.00	38	12.4	38.0	32	10.4	29.4	46	15.0	45.5
0.25	6	2.0	6.0	2	0.7	1.8	3	1.0	3.0
0.40	0	0.0	0.0	1	0.3	0.9	0	0.0	0.0
0.50	16	5.2	16.0	14	4.6	12.8	15	4.9	14.9
0.60	0	0.0	0.0	1	0.3	0.9	1	0.3	1.0
0.75	7	2.3	7.0	7	2.3	6.4	5	1.6	5.0
1.00	13	4.2	13.0	24	7.8	22.0	10	3.3	9.9
1.25	2	0.7	2.0	1	0.3	0.9	3	1.0	3.0
1.50	3	1.0	3.0	2	0.7	1.8	3	1.0	3.0
2.00	3	1.0	3.0	6	2.0	5.5	4	1.3	4.0
2.50	3	1.0	3.0	4	1.3	3.7	3	1.0	3.0
3.00	0	0.0	0.0	1	0.3	0.9	0	0.0	0.0
3.50	1	0.3	1.0	2	0.7	1.8	1	0.3	1.0
4.00	1	0.3	1.0	0	0.0	0.0	0	0.0	0.0
5.00	4	1.3	4.0	7	2.3	6.4	4	1.3	4.0
6.00	1	0.3	1.0	1	0.3	0.9	1	0.3	1.0
10.00	1	0.3	1.0	3	1.0	2.8	1	0.3	1.0
15.00	0	0.0	0.0	1	0.3	0.9	1	0.3	1.0
20.00	1	0.3	1.0	0	0.0	0.0	0	0.0	0.0
TOTAL	307	100.0	100.0	307	100.0	100.0	307	100.0	100.0

Continued ...

Table 57. Concluded.

Extramarket Benefits per Child per Day[a]	BIRDS			ANIMALS			AQUATIC LIFE		
	Number of Households	Percent of Total	Adjusted Percent of Total[b]	Number of Households	Percent of Total	Adjusted Percent Total[b]	Number of Households	Percent of Total	Adjusted Percent of Total[b]
Mean[b]	$1.12			$1.47			$1.00		
Mode[b]	$0.00			$0.00			$0.00		
Median[b]	$0.50			$0.75			$0.50		
Standard Deviation[b]	$2.45			$2.39			$2.08		

[a]Extramarket benefit is the value of a day's fish and wildlife enjoyment in the AOSERP study area by a resident person, over and above what is spent (if anything) on travel and other nonconsumptive fish and wildlife recreational expenses. There were 400 children represented in the survey of whom 250 were over 5 years of age (Table 41).

[b]Calculations are made with the exclusion of the number of households for which no dollar value extramarket benefits were given. Means, modes, medians and standard deviations are expressed in terms of dollars per day. The combined average weighted by estimated activity time among the three categories (birds, 35 percent; animals, 40 percent; and aquatic life, 25 percent) is $1.23 per child per day.

[c]Among the 307 households represented in the survey, 126 had no children (Table 40).

Table 58. Extramarket benefits per person per day from fish and wildlife enjoyment by camp residents among AOSERP study area survey respondents.

Extramarket Benefits per Person per Day[a]	BIRDS			ANIMALS			AQUATIC LIFE		
	Number of Respondents	Percent of Total	Adjusted Percent of Total[b]	Number of Respondents	Percent of Total	Adjusted Percent of Total[b]	Number of Respondents	Percent of Total	Adjusted Percent of Total[b]
Not Specified	11	10.7	n.a.	9	8.7	n.a.	12	11.7	n.a.
Priceless	5	4.9	n.a.	3	2.9	n.a.	3	2.9	n.a.
$ 0.00	28	27.2	32.2	20	19.4	22.0	32	31.1	36.4
0.10	0	0.0	0.0	1	1.0	1.1	0	0.0	0.0
0.50	2	1.9	2.3	2	1.9	2.2	2	1.9	2.3
1.00	5	4.9	5.7	5	4.9	5.5	6	5.8	6.8
1.50	1	1.0	1.1	0	0.0	0.0	2	1.9	2.3
2.00	7	6.8	8.0	11	10.7	12.1	6	5.8	6.8
2.50	3	2.9	3.4	1	1.0	1.1	5	4.9	5.7
3.00	3	2.9	3.4	6	5.8	6.6	2	1.9	2.3
4.00	2	1.9	2.3	3	2.9	3.3	2	1.9	2.3
4.50	2	1.9	2.3	1	1.0	1.1	2	1.9	2.3
5.00	16	15.5	18.4	16	15.5	17.6	14	13.6	15.9
7.00	1	1.0	1.1	1	1.0	1.1	1	1.0	1.1
7.50	1	1.0	1.1	2	1.9	2.2	0	0.0	0.0
8.00	1	1.0	1.1	0	0.0	0.0	0	0.0	0.0
10.00	5	4.9	5.7	11	10.7	12.1	5	4.9	5.7
15.00	1	1.0	1.1	2	1.9	2.2	1	1.0	1.1
20.00	2	1.9	2.3	1	1.0	1.1	2	1.9	2.3
25.00	2	1.9	2.3	1	1.0	1.1	1	1.0	1.1
30.00	2	1.9	2.3	2	1.9	2.2	3	2.9	3.4
50.00	1	1.0	1.1	4	3.9	4.4	2	1.9	2.3
55.00	1	1.0	1.1	1	1.0	1.1	0	0.0	0.0
85.00	1	1.0	1.1	0	0.0	0.0	0	0.0	0.0
TOTAL	103	100.0	100.0	103	100.0	100.0	103	100.0	100.0

Continued ...

Table 58. Concluded.

Extramarket Benefits per Person per Day[a]	BIRDS			ANIMALS			AQUATIC LIFE		
	Number of Respondents	Percent of Total	Adjusted Percent of Total[b]	Number of Respondents	Percent of Total	Adjusted Percent of Total[b]	Number of Respondents	Percent of Total	Adjusted Percent of Total[b]
Mean[b]	$6.47			$7.33			$5.16		
Mode[b]	$0.00			$0.00			$0.00		
Median[b]	$2.25			$3.00			$2.00		
Standard Deviation[b]	$12.87			$11.91			$9.57		

[a]Extramarket benefit is the value of a day's fish and wildlife enjoyment in the AOSERP study area by a respondent, over and above what is spent (if anything) on travel and other nonconsumptive fish and wildlife recreational expenses.

[b]Calculations are made with the exclusion of the number of respondents who did not provide a dollar value extramarket benefit. Means, modes, medians and standard deviations are expressed in terms of dollars per day. The combined average weighted by estimated activity time among the three categories (birds, 35 percent; animals, 40 percent; and aquatic life, 25 percent) is $6.49 per person per day.

Table 59. Value per person per year of fish and wildlife preservaiton in the AOSERP study area by survey respondents.

Preservation Benefits per Respondent per Year[a]	Household Residents			Camp Residents		
	Number of Respondents	Percent of Total	Adjusted Percent of Total[b]	Number of Respondents	Percent of Total	Adjusted Percent of Total[b]
Not Specified	12	3.9	n.a.	3	2.9	n.a.
Priceless	23	7.5	n.a.	3	2.9	n.a.
$ 0	22	7.2	8.1	11	10.7	11.3
1	0	0.0	0.0	1	1.0	1.0
2	3	1.0	1.1	1	1.0	1.0
3	1	0.3	0.4	0	0.0	0.0
5	19	6.2	7.0	8	7.8	8.2
6	1	0.3	0.4	0	0.0	0.0
10	34	11.1	12.5	9	8.7	9.3
12	1	0.3	0.4	0	0.0	0.0
13	1	0.3	0.4	0	0.0	0.0
15	8	2.6	2.9	2	1.9	2.1
20	30	9.8	11.0	8	7.8	8.2
24	1	0.3	0.4	0	0.0	0.0
25	21	6.8	7.7	5	4.9	5.2
28	0	0.0	0.0	1	1.0	1.0
30	7	2.3	2.6	1	1.0	1.0
35	0	0.0	0.0	1	1.0	1.0
38	1	0.3	0.4	1	1.0	1.0
40	2	0.7	0.7	0	0.0	0.0
50	35	11.4	12.9	15	14.6	15.5
55	2	0.7	0.7	0	0.0	0.0
60	1	0.3	0.4	0	0.0	0.0
75	3	1.0	1.1	1	1.0	1.0
100	33	10.7	12.1	13	12.6	13.4

Continued ...

Table 59. Concluded.

Preservation Benefits per Respondent per Year[a]	Household Residents			Camp Residents		
	Number of Respondents	Percent of Total	Adjusted Percent of Total[b]	Number of Respondents	Percent of Total	Adjusted Percent of Total[b]
$ 120	3	1.0	1.1	1	1.0	1.0
140	1	0.3	0.4	0	0.0	0.0
150	6	2.0	2.2	1	1.0	1.0
180	1	0.3	0.4	0	0.0	0.0
200	14	4.6	5.1	7	6.8	7.2
250	2	0.7	0.7	0	0.0	0.0
300	4	1.3	1.5	1	1.0	1.0
375	1	0.3	0.4	0	0.0	0.0
400	2	0.7	0.7	0	0.0	0.0
500	6	2.0	2.2	2	1.9	2.1
600	0	0.0	0.0	1	1.0	1.0
1000	4	1.3	1.5	2	1.9	2.1
1500	0	0.0	0.0	1	1.0	1.0
1800	0	0.0	0.0	1	1.0	1.0
2000	2	0.7	0.7	1	1.0	1.0
2500	0	0.0	0.0	1	1.0	1.0
TOTAL	307	100.0	100.0	103	100.0	100.0
Mean[b]	$94.75			$165.71		
Mode[b]	$50.00			$ 50.00		
Median[b]	$25.00			$ 36.50		
Standard Deviation[b]	$220.81			$412.79		

[a]Preservation Benefits are the benefits or willingness to pay to ensure that fish and wildlife are preserved in the AOSERP study area.

[b]Calculations are made with the exclusion of the number of respondents who did not indicate dollar value preservation benefits. Means, modes, medians and standard deviations are expressed in terms of dollars per year.

Table 60. Rating of fish and wildlife enjoyment activities in the AOSERP study area in relation to province-wide fish and wildlife enjoyment activities by survey respondents.

Ratings	Household Residents			Camp Residents		
	Number of Respondents	Percent of Total	Adjusted Percent of Total[a]	Number of Respondents	Percent of Total	Adjusted Percent of Total[a]
No Answer	6	2.0	n.a.	2	1.9	n.a.
Don't Know	65	21.2	n.a.	20	19.4	n.a.
AOSERP study area Fish and Wildlife Enjoyment Better Than Province as a Whole	61	19.9	25.8	22	21.4	27.2
AOSERP study area Fish and Wildlife Enjoyment As Good As Province as a Whole	59	19.2	25.0	18	17.5	22.2
AOSERP study area Fish and Wildlife Enjoyment Worse Than Province as a Whole	116	37.8	49.2	41	39.8	50.6
TOTAL	307	100.0	100.0	103	100.0	100.0

[a]Calculations are made with the exclusion of the number of respondents who did not provide ratings.

Table 61. Locations of fish and wildlife enjoyment activities by household members, excluding residences, of AOSERP study area survey respondents.

Location[a]	Number of Families	Percent of Total	Adjusted Percent of Total[b]	AOSERP Grid Locations[c]
No Answer	52	16.9	n.a.	n.a.
Not Specified	2	0.7	0.4	n.a.
Gregoire Lake	185	60.3	72.6	10
Anzac	93	30.3	36.5	10
Hangingstone River	50	16.3	19.6	7,9
Fort MacKay	39	12.7	15.3	6
Fort McMurray area	21	6.8	8.2	7,9
Athabasca River	18	5.9	7.1	1,3,4,5,6,7,9
Clearwater River	18	5.9	7.1	7,10
Horse River	9	2.9	3.5	3,7,9
Beaver River	8	2.6	3.1	6,7
Tar Island	8	2.6	3.1	7
MacKay River	6	2.0	2.4	3,5,6,7
Thickwood Hills	5	1.6	2.0	7
Poplar Creek	4	1.3	1.6	7
Fort Chipewyan	3	1.0	1.2	1
Stony Mountain	3	1.0	1.2	10
Mildred Lake	2	0.7	0.8	6
Waterways	2	0.7	0.8	7
Christina River	1	0.3	0.4	10
Draper	1	0.3	0.4	10
Firebag River	1	0.3	0.4	4,5
Lake Athabasca	1	0.3	0.4	1
McDonald Island	1	0.3	0.4	7
Namur Lake	1	0.3	0.4	2
Ruth Lake	1	0.3	0.4	7
Saline Creek	1	0.3	0.4	10
Surmont Creek	1	0.3	0.4	10
Steepbank River	1	0.3	0.4	6,7,8

[a] In addition to fish and wildlife enjoyment activities at these locations, most individuals also engaged in such activities at their place of residence; that is, Fort McMurray (301 families) and Anzac (6 families).

[b] Calculations are made with the exclusion of the 52 families for which locations were not provided (307 - 52 = 255). The remaining 255 families visited an average of 1.9 locations.

[c] Grid locations are given in Figure 3.

Table 62. Locations of fish and wildlife enjoyment activities by camp residents, excluding camp residences, among AOSERP study area survey respondents.

Location[a]	Number of Respondents	Percent of Total	Adjusted Percent of Total[b]	AOSERP Grid Locations[c]
No Answer	49	47.6	n.a.	n.a.
Not specified	1	1.0	1.9	n.a.
Gregoire Lake	19	18.4	35.2	10
Fort MacKay	17	16.5	31.5	6
MacKay River	13	12.6	24.1	3,5,6,7
Anzac	12	11.7	22.2	10
Athabasca River	9	8.7	16.7	1,3,4,5,6,7,9
Hangingstone River	6	5.8	11.1	7,9
Firebag River	3	2.9	5.6	4,5
Fort McMurray area	2	1.9	3.7	7,9
Gregoire Lake Indian Reserve	2	1.9	3.7	10
McClelland Lake	2	1.9	3.7	5
Muskeg River	2	1.9	3.7	5,6
Poplar Creek	2	1.9	3.7	7
Bitumount	1	1.0	1.9	5
Clearwater River	1	1.0	1.9	7,10
Fort MacKay Indian Reserve	1	1.0	1.9	6
Mildred Lake	1	1.0	1.9	6
Morton Island	1	1.0	1.9	6
Ruth Lake	1	1.0	1.9	7
Stony Mountain	1	1.0	1.9	10
Tar Island	1	1.0	1.9	7

[a] In addition to fish and wildlife enjoyment activities at these locations, active individuals also engaged in such activities at their residences (GCOS and Syncrude (Bechtel) Camps).

[b] Calculations are made with the exclusion of the 49 respondents who did not provide locations (103 - 49 = 54). The remaining 54 respondents visited an average of 1.8 locations.

[c] Grid locations are given in Figure 3.

Table 63. Other outdoor recreational activities associated with fish and wildlife enjoyment of families of AOSERP study area survey respondents.

Associated Recreational Activity	Number of Families	Percent of Total Listings[a]	Percent of Total Number of Families
Fishing	196	28.8	63.8
Driving for Pleasure	127	18.6	41.4
Camping	126	18.5	41.0
Hunting	77	11.3	25.1
Picnicing	71	10.4	23.1
Hiking	22	3.2	7.2
Snowmobiling	16	2.3	5.2
Exploring	8	1.2	2.6
Cross-country Skiing	7	1.0	2.3
Boating	6	0.9	2.0
Horseback Riding	5	0.7	1.6
Canoeing	4	0.6	1.3
Waterskiing	3	0.4	1.0
Dirt Biking	2	0.3	0.7
Swimming	2	0.3	0.7
Looking for Wildlife	2	0.3	0.7
Trapping	2	0.3	0.7
Berry Picking	1	0.1	0.3
Dog Sledding	1	0.1	0.3
Mushroom Hunting	1	0.1	0.3
Photography	1	0.1	0.3
Tobogganing	1	0.1	0.3
TOTAL LISTINGS	681		
TOTAL FAMILIES	307		
TOTAL PERCENT		100.0	

[a]The 22 activities represented here were listed a total of 681 times. On average, a respondent listed 2.2 such activities.

Table 64. Other outdoor recreational activities associated with fish and wildlife enjoyment by camp residents among AOSERP study area survey respondents.

Associated Recreational Activity	Number of Respondents	Percent of Total Listings[a]	Percent of Total Number of Respondents
Fishing	60	40.5	58.3
Hunting	30	20.3	29.1
Camping	14	9.5	13.6
Driving for Pleasure	13	8.8	12.6
Hiking	9	6.1	8.7
Exploring	8	5.4	7.8
Canoeing	3	2.0	2.9
Picnicing	3	2.0	2.9
Cross-country Skiing	2	1.4	1.9
Work	2	1.4	1.9
Photography	1	0.7	1.0
Snowmobiling	1	0.7	1.0
Swimming	1	0.7	1.0
Waterskiing	1	0.7	1.0
TOTAL LISTINGS	148		
TOTAL NUMBER OF RESPONDENTS	103		
TOTAL PERCENT		100.0	

[a]The 14 activities represented here were listed a total of 148 times. On average, a respondent listed 1.4 such activities.

Table 65. Hunting participation during the 1975 hunting season by family members of AOSERP study area survey respondents.

Category	Household Residents			Camp Residents		
	Number of Families	Percent of Total	Adjusted Percent of Total[a]	Number of Respondents	Percent of Total	Adjusted Percent of Total[a]
No Answer	49	16.0	n.a.	27	26.2	n.a.
At Least One Family Member Hunted During the 1975 Season	77	25.0	29.8	30	29.1	39.5
No Family Member Hunted During the 1975 Season	181	59.0	70.2	46	44.7	60.5
TOTAL	307	100.0	100.0	103	100.0	100.0

[a]Calculations are made with the exclusion of the number of families for which no indication of hunting participation was provided.

Table 66. Fishing participation during the 1975-76 fishing season by family members of AOSERP study area survey respondents.

Category	Household Residents			Camp Residents		
	Number of Families	Percent of Total	Adjusted Percent of Total[a]	Number of Respondents	Percent of Total	Adjusted Percent of Total[a]
No Answer	24	7.8	n.a.	9	8.7	n.a.
At Least One Family Member Fished During the 1975-76 Season	196	63.9	69.3	60	58.3	63.8
No Family Member Fished During the 1975-76 Season	87	28.3	30.7	34	33.0	36.2
TOTAL	307	100.0	100.0	103	100.0	100.0

[a]Calculations are made with the exclusion of the number of families for whom no indication of fishing participation was provided.

Table 67. Fish and wildlife species watched during outdoor recreation trips by AOSERP study area survey respondents.

Species	Household Residents		Camp Residents	
	Number of Listings[a]	Percent of Total Listings	Number of Listings[a]	Percent of Total Listings
Bird, Unspecified	190	15.1	22	7.9
Bear	167	13.3	33	11.9
Raven	147	11.7	26	9.4
Moose	98	7.8	23	8.3
Duck	81	6.4	27	9.7
Squirrel	75	6.0	14	5.0
Fish, Unspecified	68	5.4	17	6.1
Deer	54	4.3	7	2.5
Goose	42	3.3	15	5.4
Wolf	30	2.4	8	2.9
Coyote	27	2.1	4	1.4
Beaver	21	1.7	11	4.0
Gull	20	1.6	10	3.6
Chipmunk	16	1.3	3	1.1
Fox	15	1.2	0	0.0
Ptarmigan	15	1.2	5	1.8
Hawk	14	1.1	6	2.3
Robin	13	1.0	0	0.0
Grouse	11	0.9	4	1.4
Owl	11	0.0	0	0.0
Partridge	11	0.9	0	0.0
Lynx	9	0.7	0	0.0
Rabbit	9	0.7	3	1.1
Jay	8	0.6	0	0.0
Pike	7	0.6	5	1.8
Walleye	7	0.6	3	1.1

Continued ...

Table 67. Continued.

Species	Household Residents		Camp Residents	
	Number of Listings[a]	Percent of Total Listings	Number of Listings[a]	Percent of Total Listings
Muskrat	6	0.5	5	1.8
Porcupine	6	0.5	0	0.0
Woodpecker	6	0.5	1	0.4
Chickadee	5	0.4	0	0.0
Grayling	5	0.4	2	0.7
Night Hawk	5	0.4	0	0.0
Swallow	5	0.4	1	0.4
Caribou	4	0.3	0	0.0
Eagle	4	0.3	1	0.4
"Gopher"	4	0.3	0	0.0
Loon	4	0.3	3	1.1
Sparrow	3	0.2	0	0.0
Waxwing	3	0.2	0	0.0
Frog	2	0.2	0	0.0
Grosbeak	2	0.2	0	0.0
Heron	2	0.2	0	0.0
Killdeer	2	0.2	1	0.4
Mink	2	0.2	0	0.0
Mouse	2	0.2	4	1.4
Perch	2	0.2	0	0.0
Skunk	2	0.2	0	0.0
Sucker	2	0.2	0	0.0
Badger	1	0.1	0	0.0
Bison	1	0.1	0	0.0
Blackbird	1	0.1	1	0.4
Bluebird	1	0.1	0	0.0
Crane	1	0.1	2	0.7

Continued ...

Table 67. Concluded.

Species	Household Residents		Camp Residents	
	Number of Listings[a]	Percent of Total Listings	Number of Listings[a]	Percent of Total Listings
Crow	1	0.1	1	0.4
Fisher	1	0.1	0	0.0
Goldeye	1	0.1	3	1.0
Hare	1	0.1	0	0.0
Martin	1	0.1	0	0.0
Otter	1	0.1	1	0.4
Pelican	1	0.1	0	0.0
Snipe	1	0.1	0	0.0
Weasel	1	0.1	0	0.0
Wolverine	1	0.1	0	0.0
Oriole	0	0.0	1	0.4
Sandpiper	0	0.0	1	0.4
Stickleback	0	0.0	1	0.4
Swan	0	0.0	1	0.4
Toad	0	0.0	1	0.4
Woodchuck	0	0.0	1	0.4
TOTAL	1,259	100.0	278	100.0

[a]Respondents were asked to indicate up to four species seen in each of up to four locations away from residence, where they had taken one or more trips to these locations. A total of 221 household respondents and a total of 53 camp respondents indicated at least one species seen.

Table 68. Mode of travel on outdoor recreation trips by AOSERP study area survey respondents.

Mode of Travel	Household Respondent: Percent	Camp Respondent: Percent
Car or Truck	90.7	79.2
Hike (on foot)	3.6	5.2
Motorboat	3.3	1.0
Aircraft	1.0	4.2
Snowmobile	1.0	0.0
Canoe or Rowboat	0.2	5.2
Jetboat	0.2	3.1
Motorbike	0.2	0.0
Four-wheel Drive or ATV	0.0	2.1
TOTAL	100.0	100.0

Table 69. Average costs per trip incurred by AOSERP study area survey respondents.

Average Costs per Trip	Household Residents[a]		Camp Residents[b]	
	Number of Respondents	Adjusted Percent of Total[c]	Number of Respondents	Adjusted Percent of Total[c]
Not Specified	40	n.a.	4	n.a.
$ 0	67	25.1	54	54.5
1	1	0.4	2	2.0
2	5	1.9	1	1.0
3	3	1.1	1	1.0
4	1	0.4	0	0.0
5	95	35.6	8	8.1
8	0	0.0	1	1.0
10	42	15.7	4	4.0
12	0	0.0	1	1.0
13	0	0.0	2	2.0
15	17	6.4	3	3.0
18	2	0.7	0	0.0
20	8	3.0	4	4.0
22	1	0.4	0	0.0
25	5	1.9	4	4.0
30	9	3.4	4	4.0
35	4	1.5	0	0.0
40	2	0.7	0	0.0
50	0	0.0	3	3.0
60	0	0.0	1	1.0
75	0	0.0	4	4.0
125	1	0.4	0	0.0
150	0	0.0	1	1.0
200	1	0.4	0	0.0

Continued ...

Table 69. Concluded.

Average Costs per Trip	Household Residents[a] Number of Respondents	Household Residents[a] Adjusted Percent of Total[c]	Camp Residents[b] Number of Respondents	Camp Residents[b] Adjusted Percent of Total[c]
$300	2	0.7	0	0.0
900	0	0.0	1	1.0
990	1	0.4	0	0.0
TOTAL	307	100.0	103	100.0
Mean[c]	$14.69		$20.59	
Mode[c]	$ 5.00		$ 0.00	
Median[c]	$ 5.00		$ 0.00	
Standard Deviation[c]	$66.82		$91.77	

[a]Each household, on average, makes 13.33 outdoor recreation trips per year involving an average of approximately 2 days per trip during which nonconsumptive recreation fish and wildlife activities away from residence are engaged in. Approximately 80 percent of households in the AOSERP study area take such trips within the area, increasing the average number of trips per year per active household to 17.34. The average round trip distance per trip is 54.6 miles.

[b]Each camp resident, on average, makes 5.70 outdoor recreation trips per year involving an average of approximately 2 days per trip during which nonconsumptive recreation fish and wildlife activities away from camp residence are engaged in. Approximately 50 percent of camp residents in the AOSERP study area take such trips within the area increasing the average number of trips per year per active individual to 11.98. The average round trip distance per trip is 57.3 miles.

[c]Calculations are made with the exclusion of those respondents who did not indicate their outdoor recreation expenses.

Table 70. Comments on the importance of AOSERP study area fish and wildlife resources provided by household residents among survey respondents.

Comment	Number of Respondents
More parks and reserves needed	76
More and improved access needed	51
More outdoor recreation facilities needed	50
Much more pollution control and other environmental protection needed	25
Reduced and controlled fish and wildlife harvest, particularly hunting, needed	25
More fish and wildlife conservation needed	23
More enforcement regarding fish and wildlife is needed	22
Reduced overcrowding needed, particularly at Fort McMurray and Gregoire Lake Provincial Park	22
More education and information about fish and wildlife is needed	19
Fish and wildlife are priceless	13
Wildlife is seen along highway and at GCOS and Syncrude sites	13
Fish and wildlife are very important	12
Have not been in the area long enough to comment	12
Fish and wildlife populations are declining	9
Not interested in fish and wildlife	8
The AOSERP study area should be preserved in its natural state	5
Imporved garbage facilities are needed at Gregoire Lake	5
Part of AOSERP study area industry profits should go to reclamation to ensure fish and wildlife preservation or restoration	5
Reduced use of motorized recreation vehicles is desirable	4
Stocking of streams needed	4
Control of bears in populated areas needed	4
People are money oriented and don't care about the environment	3
Increase fish and wildlife populations in populated areas	2
Industrial development should have priority over fish and wildlife	2
Man and animals cannot coexist	2
More access is not desirable	2
Stop mining activity	2
Companies are doing a good job concerning the environment	1
The public does not have a chance against the oil companies regarding the AOSERP study area environment	1
Miscellaneous[a]	21
TOTAL NUMBER OF COMMENTS[b]	443

Continued ...

Table 70. Concluded.

[a]Includes comments which did not pertain to evaluation of the importance of fish and wildlife.

[b]Among the 307 household resident survey respondents, 52 gave no comment, 67 gave one comment and 188 gave two comments.

Table 71. Comments on the importance of AOSERP study area fish and wildlife resources provided by camp residents among survey respondents.

Comment	Number of Respondents
Much more pollution control and other environmental protection needed	18
More outdoor recreation facilities needed	13
More and improved access needed	10
More parks and reserves needed	10
More fish and wildlife conservation needed	9
Fish and wildlife is priceless	8
The AOSERP study area should be preserved in its natural state	7
More access is not desirable	6
Reduced and controlled fish and wildlife harvest, particularly hunting, needed	6
Wildlife is seen at the Syncrude site	5
More enforcement regarding fish and wildlife is needed	4
People are money oriented and do not care about the environment	4
More education and information about fish and wildlife is needed	3
Have not been in the area long enough to comment	3
Stocking of streams needed	3
A balance between industrial development and resource conservation is needed	2
Fish and wildlife are very important	2
Improved garbage facilities are needed at Gregoire Lake	2
Reduce hunting	1
Fish and wildlife populations are declining	1
Industrial development should have priority over fish and wildlife	1
Part of industry profits should go to reclamation to ensure fish and wildlife preservation or restoration	1
Reduced overcrowding needed	1
Reduced use of motorized recreation vehicles is desirable	1
Syncrude seems to be clearing land prematurely	1
The public does not have a chance against the oil companies regarding the AOSERP study area environment	1
Too busy working to enjoy fish and wildlife	1
Fish and wildlife are not in danger so long as they can move elsewhere	1
Miscellaneous[a]	10
TOTAL NUMBER OF COMMENTS[b]	135

Continued ...

Table 71. Concluded.

[a]Includes comments which did not pertain to evaluation of the importance of fish and wildlife.

[b]Among the 103 camp resident survey respondents, 22 gave no comment, 27 gave one comment, and 54 gave two comments.